THE TECHNOLOGY REVIEW

MAY 1930

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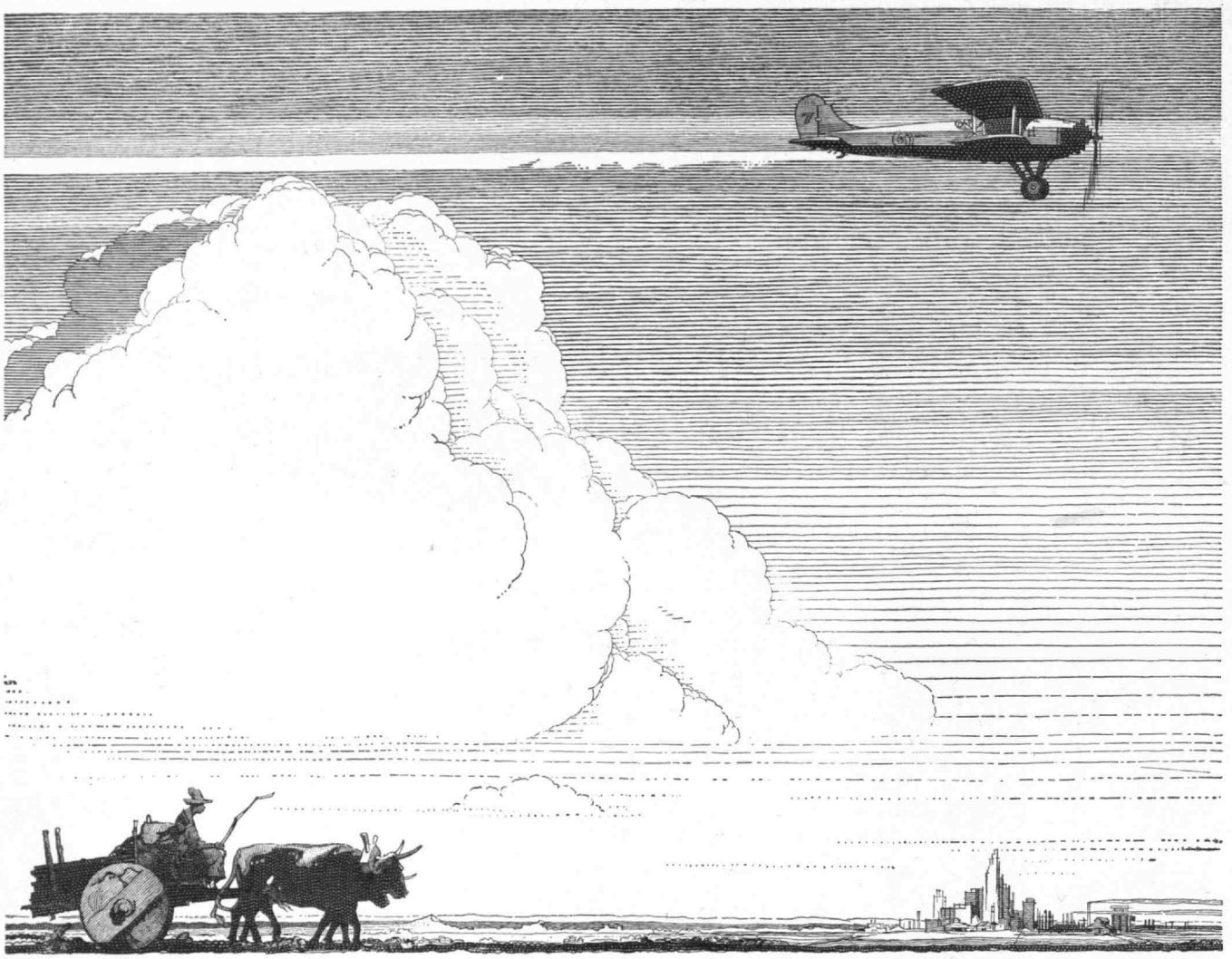

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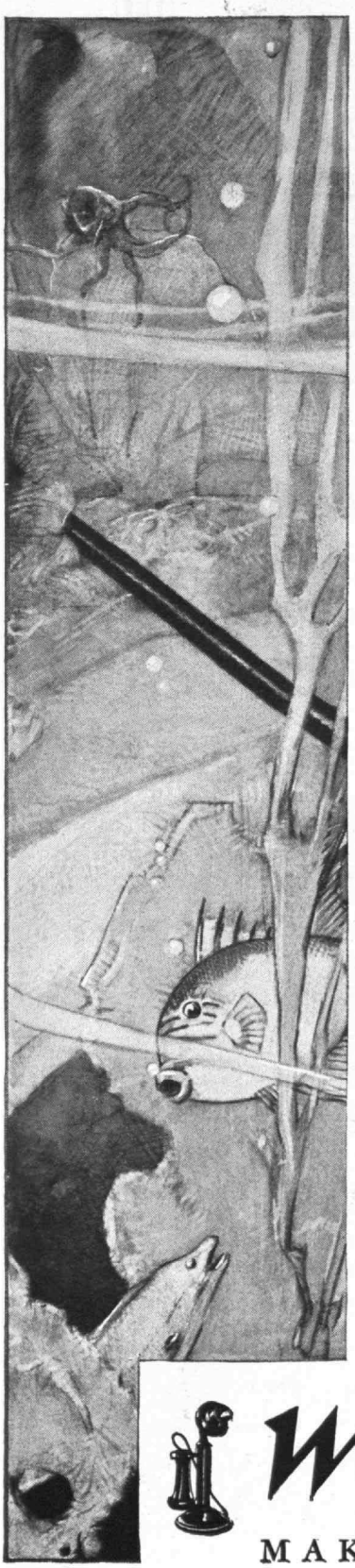

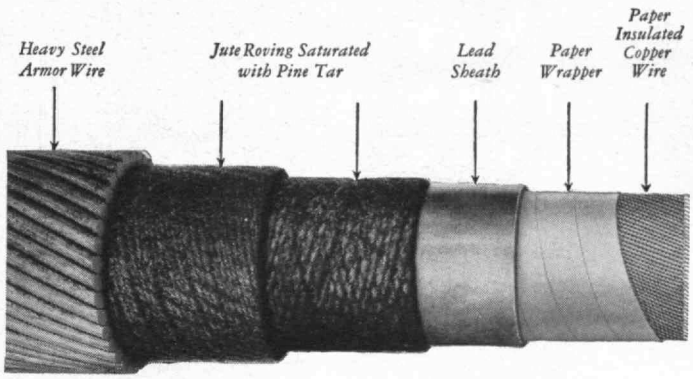

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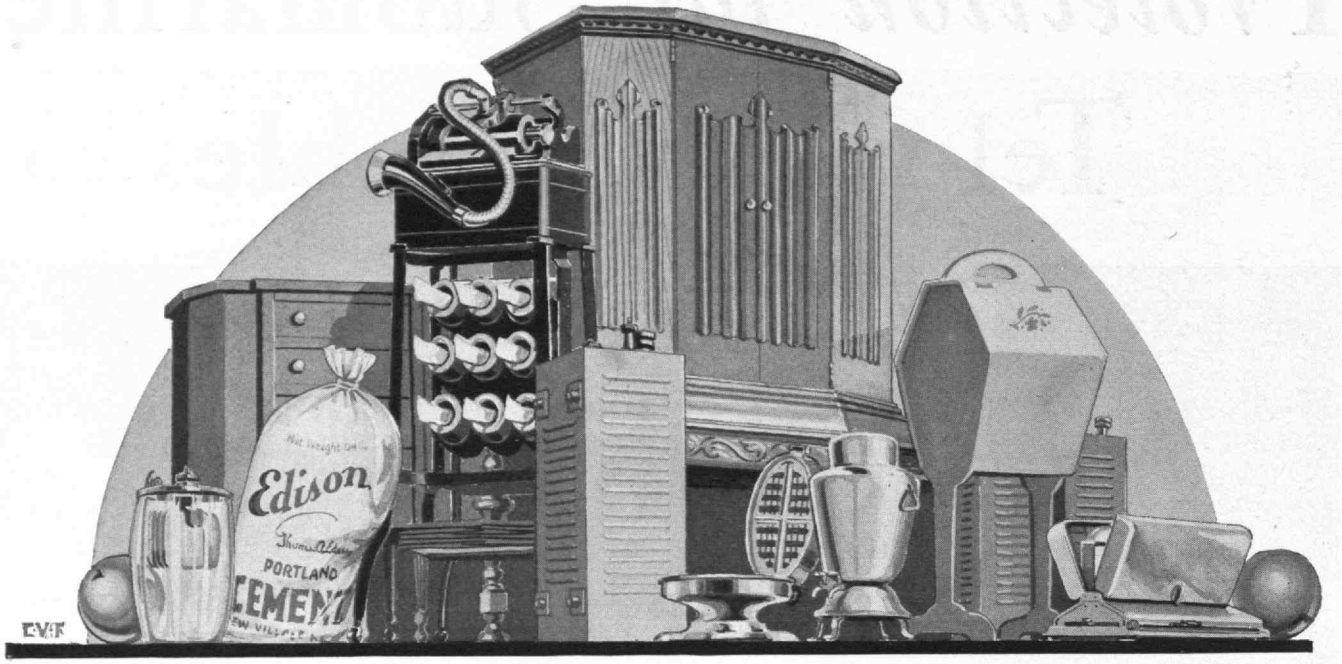

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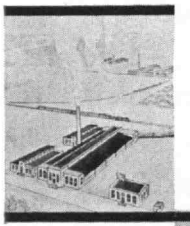

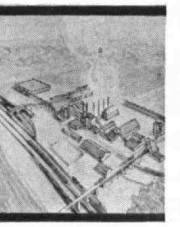

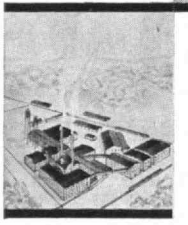

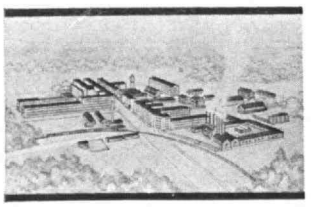

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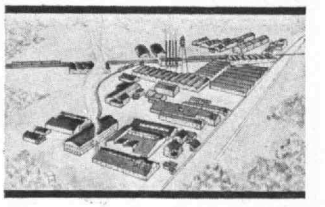

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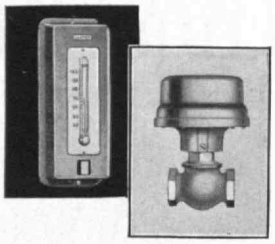

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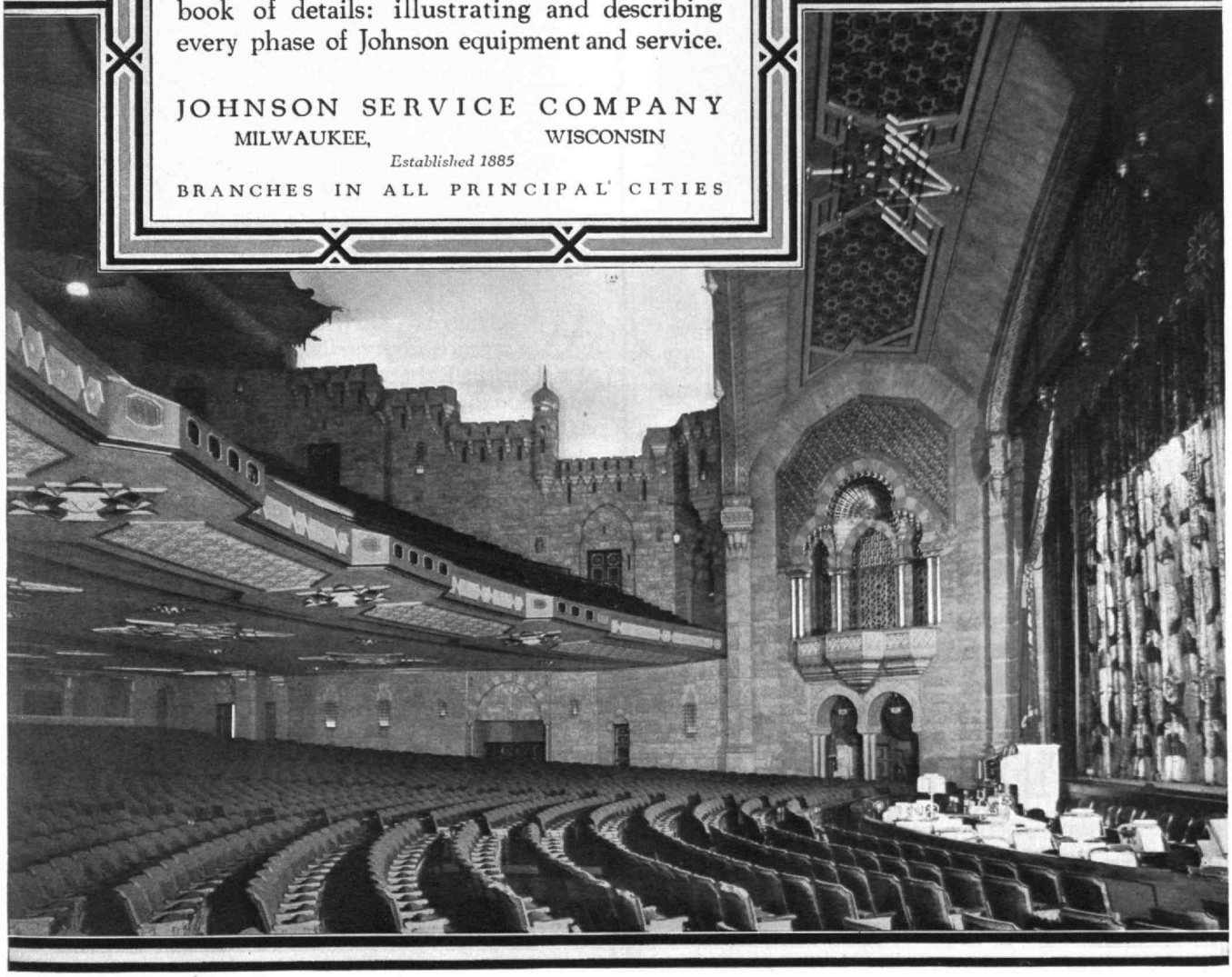

THE TABULAR VIEW

IN AN ESSAY, "The Mucker Pose," published a year or so ago in *Harper's*, JAMES TRUSLOW ADAMS anticipated in a more sober manner, if he did not inspire, PROFESSOR ROGERS's innocent divertissement upon being a snob. The manner in which that article was written revealed that Dr. Adams not only is an able historian but also an astute critic of American life. An examination of his career reveals his unique background for work in these two fields. He graduated from the Brooklyn Polytechnic Institute in 1898, received an A.M. from Yale in 1900, and subsequently became a member of the New York Stock Exchange. An engineer turned broker is not uncommon but an engineer turned historian is. The latter Dr. Adams accomplished successfully, and by 1922 he had captured the Pulitzer Prize of $2000 for the best book on the history of the United States written during the previous year ("The Founding of New England"). Between 1912 and 1922 he had participated in the World War in the capacity of Captain in the Military Intelligence Division, General Staff, United States Army. Early in the War he was with Colonel House's commission to prepare data for the Peace Conference. ¶ Aside from his Pulitzer Prize book, he has written "Revolutionary New England 1691–1776," "New England in the Republic (1776–1850)," "Provincial Society (1690–1763)," and "Our Business Civilization," the latter book containing the article mentioned above. Despite all of these various achievements, Dr. Adams has kept in touch with modern developments in science, particularly physics, and he recently contributed an able article to *The Yale Review* on Henry Adams and the new physics. The Review is very happy to present a sequel to that article discussing at greater length the application of the scientific method to the study of history.

WALDEMAR LINDGREN, who has achieved eminence in America as an economic geologist, was born in Kalmar, Sweden in 1860. He received his education in his native country but came early to America to join the United States Geological Survey for which eventually he became chief geologist in 1911. In 1912 he came to Technology as William Barton Rogers Professor of Geology, having lectured here since 1908. From 1912 to 1920 he was in charge of the Department of Geology, from 1920 to 1926 of the combined Departments of Mining, Metallurgy, and Geology, and since 1927 of the now distinct Department of Geology. He is the author of the authoritative work, "Mineral Deposits," and innumerable reports on mining geology. During his long residence in the United States he has not forgotten his native land and his article on page 345 demonstrates this continued interest. It is particularly valuable because of Dr. Lindgren's detached position and of the comparisons which his American experience enables him to draw.

HENRY M. PROPPER, who collaborated with THOMAS C. DESMOND, '09, in the preparation of the article on Radburn, N. J., is an official of the City Housing Corporation which has built this unique

(*Continued on page 334*)

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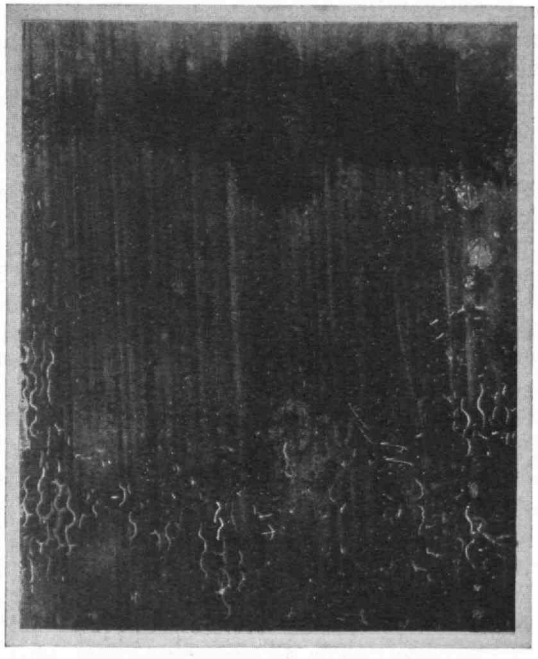
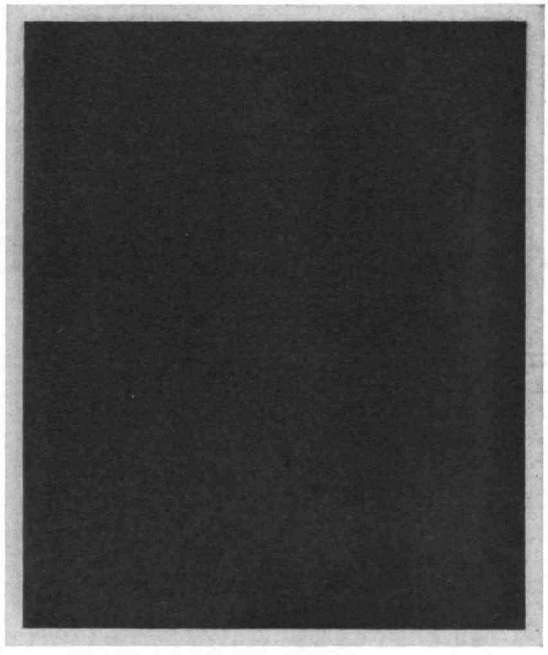


PLATE II

SILVERED BY THE "EVALAST" PROCESS



These illustrations were made from actual photographs (without retouching) of specimens of mirror plates which were submerged constantly in water for over eight months, except for occasional inspection, and demonstrate graphically the action of silver under atmospheric moisture when applied by the usual process and by the "EVALAST" Process.

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THE TABULAR VIEW

(Continued from page 332)

city. Mr. Desmond, through his manifold activities in behalf of the Institute, his engineering firm in New York, and his activity in Republican politics, is well-known to Review readers. Messrs. Propper and Desmond's article was prepared at the request of The Review Editors as one in a series which is being published on city planning, its needs, its philosophy, and its achievements. ¶ J. RHYNE KILLIAN, JR., '26, is Managing Editor of The Review.

THE PHOTOGRAPHS on pages 340, 348, and 349 are the work of Miss Margaret Bourke-White of Cleveland, Ohio. With a camera technique hardly equalled in America, she has brought to the photography of industrial subjects a precipient artistic sense which has quickly brought her renown. It is a pleasure to present her work along with the other fine illustrative material which The Review has been running on scientific and engineering subjects. ¶ JACQUES CARLU, *Maestro* of the Institute's Department of Architecture, executed the water color reproduced on the cover of this issue. He was born in Paris, France, in 1890, and in 1919 won an A.D.G. from the *École des Beaux Arts*. His water color, reproduced on the cover of the November issue of The Review was received with such approbation, that The Review is fortunate again to present his work.

SEVERAL COMMENTS have come in on A. W. K. BILLINGS's ['28] article, "Modernistic Architecture," published in the February issue. An extensive criticism from SHEPARD VOGELGESANG, '26, is excerpted below, with the regret that it cannot be published in full. "Possibly it is unfair to consider that all of the most modern European architecture stands condemned in the February issue of The Technology Review. Much of the text stated architectural principles and problems clearly. The choice of photographs seems somewhat malicious, and there are a few additional principles underlying modern European design which might be stated. So far as possible, any work should be thoroughly understood before it is condemned. The most just condemnation comes from comprehension of the aims of the work and detection of its failure. When Le Corbusier builds a *machine à habiter* which is uninhabitable and Gropius erects a school in which teaching is impossible, there is ground for criticism of their intelligence. When the buildings appear shoddily built the architect's economics are at fault. If they are displeasing in proportion, then the artist is accountable. Good proportion is in addition a matter of intelligence. Granted iron as a column material, would the supports of the roof slab in. . . . Les Terraces be more satisfactory five times their diameter?

"This question arrives at one of the points of departure from academic design made by modern architecture. The architect who employs the traditional mode surrounds his iron column with a stone column or pier.

(Concluded on page 336)

THE TABULAR VIEW

(Concluded from page 334)

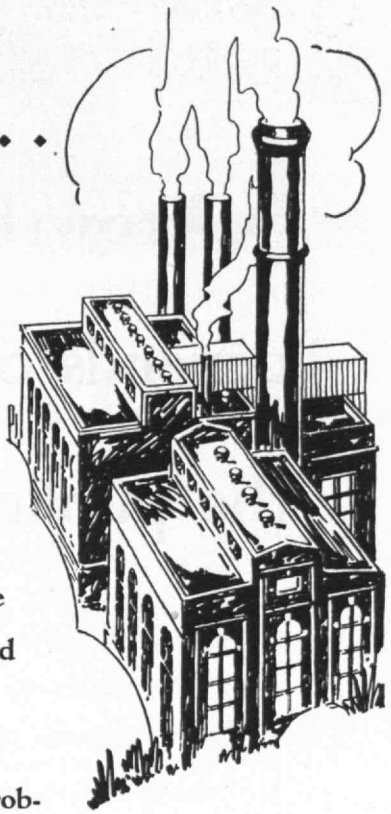
The modern architect recognizes that the function of this apparently stone column is performed by the iron within. He takes the working member, considers its relation to other materials traditional and untraditional in the surrounding building and creates for it a proportion emblematic of its substance. To persons reared on the stone conception of a column the result is shocking. Once the intellectual adjustment is made to a new material, then one can judge of its aesthetic sufficiency to its surroundings. . . .

"It is undeniable that the result, no matter how true to the material or how good a working solution to the problem, may be ugly. So are many buildings independent of the functional conceptions of the moderns. Neither traditionalism or modernism is a panacea for beauty. Beauty is a personal expression of the artistic feeling of the architect. It is the record, in a sense, of his adjustment to his environment and is the flowering of the life about him. Beauty is a thing felt and usually makes nonsense when written about. Ideas can be written about, but feelings become ideas when expressed. One must be generous enough to admit the possibility of achieving beauty in any manner. . . . Only when the horror of seeing concrete cantilever and steel look wiry and the awful knowledge that St. Peter's dome is held in by a belt of chains is overcome, can one nowadays become absorbed in the aesthetic aspect of building.

"There are ideas other than . . . the functional expression of substance back of the modern movement . . . It is best represented by shoe store architecture in the United States, soon to be eclipsed, however, at least in magnitude by the completion of the Chrysler Building. It is this modernistic design in the United States and France which points to good sense on the part of much of Europe in discarding decoration as a mode of modern expression. . . .

"It was the violence done materials by machine which started some of the modern striving to find ways of avoiding the appearance of torture either by returning to craftsmanship or by seeking methods of work wherein the material and the machine agreed. . . . Picturesque results of the machine age are the fantastic activity of man to consume articles put out by the machine and the frenzied adoption of new means of locomotion and communication. These are the features of modern life which man has been able to romanticize successfully. Can likewise the romanticism of American building with scores of stories in the sky, Greek temples, flashing spears, spreading wings, gilded howdahs, calliope pipes, chromatic sunbursts, Renaissance domes, Gothic flêches, water coolers, coronets, chateaux roofs, lotus blossoms, lightning brandishers be conceded romantic success? The eccentricity of European architects grows somewhat pale before such a literal enumeration of the beauties conjured by supposedly conservative architects against the New York sky. If one name a single, recent important building in New York unmarked by such eccentricities it must be the Daily News by Raymond Hood '03. . . ."

"Cut production costs,". . . .



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THE TECHNOLOGY REVIEW

Edited at the Massachusetts Institute of Technology

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STEEL

CLASSICISTS WOULD TITLE IT "SPIRIT OF HEPHÆSTUS, GOD OF THE FORGE"

The TECHNOLOGY REVIEW

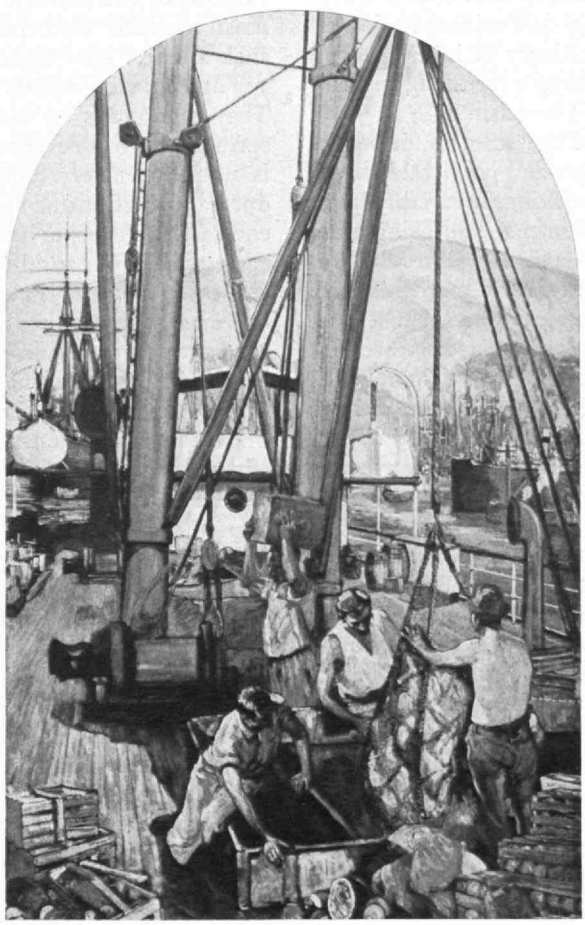
VOLUME 32 · MAY, 1930 · NUMBER 7

IS HISTORY A SCIENCE?

Henry Adams's Physics Simplified But Did Not Solve History's Problems

BY JAMES TRUSLOW ADAMS

IN NO OTHER CITY in the world are the problems of history so insistent as in Rome, and, as it chances, it is in Rome that I must comply with the request of the Editor of The Review for an article on history regarded as a science. Within a few hours I was examining the recent excavations of Etruscan remains from far below the lowest level of the oldest Roman Forum and standing in a dense mass of tens of thousands of Roman citizens of today in the Via Nazionale to watch Mussolini march in the funeral procession of the great Fascist, General Bianchi. Between that Etruscan shrine of perhaps 800 B.C. and the solemn funeral drums of the Bianchi funeral yesterday lay the whole history of our western European civilization. Historians and archaeologists, naïve or scholarly, have busied themselves with it these two thousand years past. How much more do we know, "scientifically," about it all than we did when Livy, Gucciardini, or Gibbon, centuries from each other, wrote their successive accounts of the great process? As though flashed on a screen, we see bits of the great drama in all its stages — the struggle of semi-savage or barbarian tribes in the dark shadows of history's dawn; the rise of the city to world empire, a city of marble palaces with a million inhabitants living on the tribute of Europe and Asia and Africa; the slow decline to a den of robbers, but seventeen thousand people, it has been said, fighting each other among the desolate ruins; the new splendor again of the Renaissance; the great capital of today. We feel the pulsations of some great natural process, as in the vast cycles of ice-age and temperate climates in geologic epochs. But what do we know of it all? In the rise and fall of Rome we have, so to say, a historical phenomenon on a cosmic scale. Perhaps no other has been the subject of equally prolonged research. But we know no more than our predecessors. According to predilection of preoccupation, historians may stress as causes of the fall, morals, a shift in trade routes and exchanges, exhaustion of soil, or a dozen other influences, but all mere hints, guesses, suggestions. Rome offers us classic examples of the rise and fall, rise and fall again, and rise once more of great civilizations, yet all we have concerning these fundamental historical phenomena are vast masses of data, preserved and accumulated more or less at hazard, and narratives written according to the taste and interests of the narrators. Is this sort of thing science, or can it ever become science?



"THE SHIPPING INDUSTRY IN THE HARBOR OF SAN PEDRO," A MURAL BY ALSON CLARK IN THE FIRST NATIONAL BANK OF PASADENA

Obviously before even attempting an answer we must define what we call "science," for a large part of the discussions in this world could be avoided by agreeing on terms at the outset. I do not insist upon my own definition of the term as being the only correct

one but clearly much misunderstanding can be avoided if I state what it is.

It seems to me that there is a great difference between a body of knowledge that is pursued in a scientific spirit and one which has become a science. I do not think that there is much room for dispute today over the qualities of the scientific spirit, such as accuracy, patience, exhaustive enquiry, utter disinterestedness, the searching for truth without fear or bias. But there is noticeable today a frequent tendency to confuse the qualities of the subject and the object, that is, to consider a body of knowledge which is investigated in the scientific spirit as having for that sole reason become itself a science. There are many causes for this confusion, some of which are to be found quite as much in the social as in the intellectual temper of our age, but the confusion itself does much harm.

For one thing, it tends to blind us as to method, results, and the nature of the phenomena themselves on which we are working. In the practical world men are quickly checked by results. Let us suppose, for example, that a man examines the most up-to-date machinery used in a great oil field and that he then orders a similar plant set up on an abandoned New England farm. In spite of the fact that he had all of the machinery, though no oil flowed, he would be considered crazy if he insisted that he had an oil field, and if he tried to sell stock on that basis he would quickly land in jail. There are no similar checks in the intellectual world, but the comparison is not too far-fetched, for I do believe that today many branches of knowledge are being denominated sciences merely because the scientific machinery of investigation or the scientific spirit has been set up over them, regardless as to whether there is any oil beneath.

"Striking oil" in the fields of the sciences, it seems to me, consists in establishing laws and predictability of results, that is, in discovering how things invariably happen in any chosen group of phenomena, and being able to say that if so and so occurs, so and so will result. We may be able to do this with the extreme mathematical accuracy of an astronomer, the certainty of a chemist, the somewhat looser accuracy of a biologist, but until we can do something of the sort, I do not see why we should call the particular body of knowledge we are investigating, with however exalted a scientific spirit, a science. It is merely a mass of data that by scientific methods we are trying, without success as yet, to reduce to a semblance of scientific order. The scientific spirit is absolutely essential for the task but that is not enough. Even with that spirit, there may be two reasons why we are not creating a science. In this brief article I cannot trespass on metaphysics, but one reason may be that the phenomena by their very nature are not capable of being reduced to scientific order, that is, that they form a portion of the universe not capable of being interpreted by the scientific method, useful as that tool has proved in many other portions. Or, again, it may be that while the spirit is right the particular method so far used has not been so. To call the body of knowledge a science merely because it is pursued in the scientific spirit is to blind us to both of these possibilities. We are in the position of the man who insists he has an oil field because all the machinery is set up. On the other hand, if we do not call it a science until we have "struck oil" in the sense noted above, we are apt to be much more on the lookout for possible faults in method or choice of the field of operations.

It is, however, in this sense and this sense only that history can claim to be a science today. I think it is wholly a mistaken sense for the reasons given above. That the modern historian is animated by the scientific spirit is happily true. He seeks in that spirit to know the truth and only the truth, regardless of romance or cherished prejudices and faiths. He no longer regards history as romance or drama or propaganda. He works in the same spirit over the coinage of the Antonines or the rights of a feudal manorial lord as the chemist does over the molecular construction of hydrates or the astronomer over the formation of nebulae. But this, necessary as it is for a beginning, and essential as it is to achieving scientific results, does not mean that any result has yet been attained, beyond the accumulation of a large number of studies of more or less idiosyncratic and individual phenomena here and there. So far not a single law has been found to account for events in the past, not a single advance has been made in ability to predict the future. We have a greater mass of accurate information about a greater mass of facts than ever before but these facts are as yet wholly unrelated causally. The chemist in his field of research has made enormous strides scientifically beyond the alchemist; the historian has made none beyond the statesman. A wise statesman, ignorant of "scientific" history, would probably make far more accurate predictions as to the historic process in the next decade than most scientific historians. The latter could not predict such a major movement as the Great War. They cannot yet agree on its causes. They cannot predict its results. They cannot answer one of the thousand questions that spring at me from every street corner in Rome. If a subject is a science merely because investigations in it are conducted in a scientific spirit, then history is today a science. If, on the other hand, it is not a science until at least some streaks of causal order have been found in it, some sequences isolated that are found to be dependable and universal, then assuredly history is not a science.

Most men today do not like to follow lost causes or lead forlorn hopes. They like to be on the band wagon. Moreover, faith is in the discard. Men want "certainty." The trade wind that carries men to port in our intellectual climate is science, not religion or art. To call history a science seems to make the historian more respectable. It also relieves him from a great deal of most uncomfortable self-criticism. If the output of narrative works, of monographs on minute details, of uncountable, and usually unreadable, Ph.D. theses have made history a science, then why worry? The method calls for much patience but little thought. Once learned it can be followed for a lifetime, and if the scientific spirit makes history a science, it is easy to win the best of two worlds, for we have neither to attain to the ordered knowledge and predictability of the true scientist nor to the beauty of style and composition of the artist. If the scientist complains that history is merely a story, we can tell him that he must not expect the same sort of results as in *his* science, and if the artist complains of the dry-as-dust style, we can tell him that history is a science, not an art. If, however, we admit, as I think we ought, that in spite of infinite labor, the best intentions, and the scientific spirit, history

"SCIENCE REVEALING THE TREASURES OF EARTH," A MURAL BY EDWIN A. ABBEY IN THE PENNSYLVANIA CAPITOL BUILDING

shows as yet no signs of becoming a genuine science, we are at once put to it to ask why? The asking of questions is the beginning of knowledge if not of wisdom.

We saw above that to create a true science three things were needful — the scientific spirit of enquiry, a proper method, and a mass of data that proved susceptible of being correlated under laws. If we admit that modern historians have the scientific spirit but have not succeeded in producing a science, we may look for the trouble in the other two factors. Are historians using the right method and is the mass of data with which they busy themselves susceptible of being arranged in ordered sequences in which they shall invariably bear any causal or other predictable relation to one another? The two points are closely related for the delimiting of a field of enquiry is in itself a first step in method.

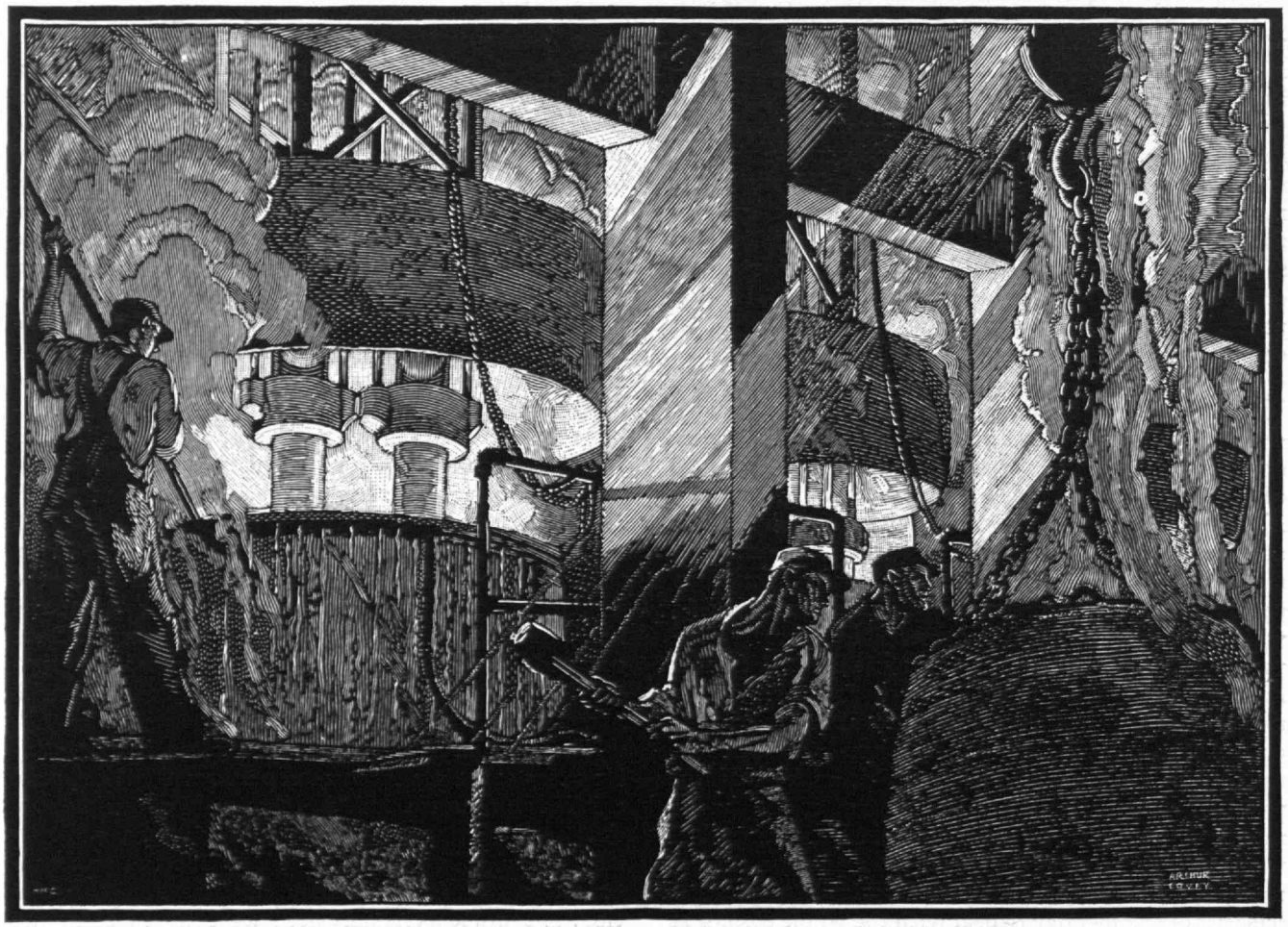
EACH and every science has chosen a special field with which it has concerned itself to the almost complete exclusion of every other aspect of the data involved. One of the most interesting developments of the present day is the tendency of these fields to intersect and overlap, and the problems of the future will be far more complex than those of the past, but this does not invalidate the necessity for each science to delimit sharply the field in which primarily it shall work, one might almost say the particular "layer" of reality or experience. The field of history, as worked at present, differs from other fields in two marked points, in a sense contradictory to one another: its lack of limitation and its very narrow limitation. As to the first, history has taken as its province practically everything that has happened to the human race. Man is a microcosm and to ask the historian to deal with the whole of his thoughts, acts, passions, aspirations, environment, is much like asking the physical scientist of an older day to deal with the whole cosmos at once. In another respect, however, the historian's field is sharply limited. In spite of the various mathematical systems possible, any one of them may be considered valid *semper et ubique*. A chemical atom also acts in the same way for the chemist in Sirius or in his laboratory, and acted the same way a million years ago as today. A biologist may study the growth and construction of living cells by the million. The historian is limited to a certain number of documents, using the word in a broad sense, prepared in the first place, and saved to us in the second, by all sorts of fortuitous chances, present at all for only a few thousand years past and in any considerable quantity for not more than one or two. This is indeed scanty material on which to base broad generalizations or to erect laws. But even this material is characterized by a great and almost insuperable difficulty, the individualization of every item in the historian's data. I have treated of this elsewhere and need not dwell on the point here, but merely note that for the chemist every atom of oxygen is like every other atom of oxygen, that the biologist can study an infinite number of cells all alike, and so on. The atoms or cells of the historian are individual men and women, and their action and interaction, either as individuals or in large masses as "periods" and "nations" are vastly complicated for him by that fact. Given the enormous complexity of the historian's material, the insufficiency of his documentary evidence for it, and the briefness of the period during which his phenomena have occurred, it is evident that it will be only with the greatest difficulty that the material can be reduced to genuine scientific order, if at all.

Whether that may prove feasible or not, it is impossible to say at the present stage of our investigations, and I think it far wiser to admit that fact, and its implications, than to claim that we already have a science and that therefore we are on the right track. It is far better to ponder the problem and to consider possible methods of solution. The problem certainly needs a solution, whether we can attain to one or not. The kindred one of sociology depends largely upon it and is one of the most pressing in

the immediate future. It is becoming a commonplace, but a no less dangerous situation for that reason, that our knowledge of the physical world and our control over our environment have advanced so rapidly as contrasted with our ignorance of and control over the social organism that we are in imminent danger of destruction by our own one-sided advance in science. It is as though one of a man's legs were growing rapidly so much longer than the other as to threaten his ability to walk. Old-fashioned statecraft was none too good, but with the slow changes in environment in the old days it was wisdom incarnate as compared with what we are likely to be able to count upon if we cannot make some progress in the sciences of history and society comparable to those in the physical ones. In spite of the scientific spirit and the vast amount of data now accumulated, we cannot say that we have reduced either of these bodies of knowledge to scientific order. It is much too early and far too dangerous, however, to admit total defeat. The nature of the material with which the historian has to deal is given and cannot be altered. Stores of manuscripts may yet come to light but not in sufficient quantities compared with what we possess to change greatly the character of our task, however welcome may be the additional details.

What, then, is the situation? Let us grant that we are working in the scientific spirit. As to whether or not the field in which we are working is capable of a scientific ordering we cannot say, but we must perform an act of faith and continue as though it were. To deny it is to deny man's ability to improve his condition by science. To pledge ourselves to follow what may be a forlorn hope in the possibly vain one of saving mankind is nobler than to claim we have already attained where we have not, and to consider our method no further. The problem that must be attacked in the future if there is to be any hope of success is the problem of method. We have attained the scientific spirit. We cannot alter, though we might variously delimit, our field. The only remaining factor is method, and it is to that that I would ask historians to devote their deepest thought, for it *will* take thought, thought far deeper than is involved in writing standard narrative history or monographs on some special incident or institution.

Perhaps it is not right to ask the historians to do this. We must always have histories of the sort we have had and there is no chance of making science out of narrative history, however much of the scientific spirit may go into their writing. The more we consider the problem, the more complete the change in method required appears to me to be. In fact it is so complete that I question whether the new science, if one is to arise at all, would bear enough resemblance to what we have always considered history as to warrant our using the same name for it, it being always better to get (*Continued on page 380*)



FROM A WOOD BLOCK ENGRAVING BY HOWARD McCORMICK OF A MURAL, "MAKING OF GRINDING WHEELS," IN NORTON HALL, WORCESTER, BY ARTHUR COVEY

Ewing Galloway

TROLLHÄTTAN RAPIDS

THE NEW SWEDEN*

The Vikings Have Become Able Scientists and Engineers

By Waldemar Lindgren

FOR the last 50 years I have followed with interest the transformation of the land of my youth — a land of primitive industries — into an industrial and manufacturing country. During a recent visit I was particularly impressed with the far-reaching and deeply interesting nature of these changes.

These old-time industries were agriculture, lumbering and export of rough lumber, fishing, mining, and smelting of iron ores to pig iron and steel. Of course, there were always manufactures, but these interests never dominated. About 1880 there were only 60,000 persons employed in manufactures with products totaling only $40,000,000. At the present time there are about 12,000 factories with a personnel of about 350,000 and a total value of products of well over $1,000,000,000. This tells the story. Of course, the industries are still largely based on the primitive resources, timber and iron, to which must be added the utilization of electric power. But instead of steel, machines are exported; instead of raw lumber, wood pulp.

It may be said without exaggeration that Swedish engineers and financiers have planted their flag in the four corners of the earth. A wise and cautious policy — the only one that could be pursued without courting destruction — has enabled an originally poor and sparsely populated country to expand and grow wealthy, and all this has been accomplished without political pressure or "mailed fist" methods. To a considerable extent this prosperity is shared by Norway and by Denmark but different factors enter and conditions are not exactly comparable. Sweden is a rather large country — nearly 1,000 miles long from north to south and about 250 miles wide. It

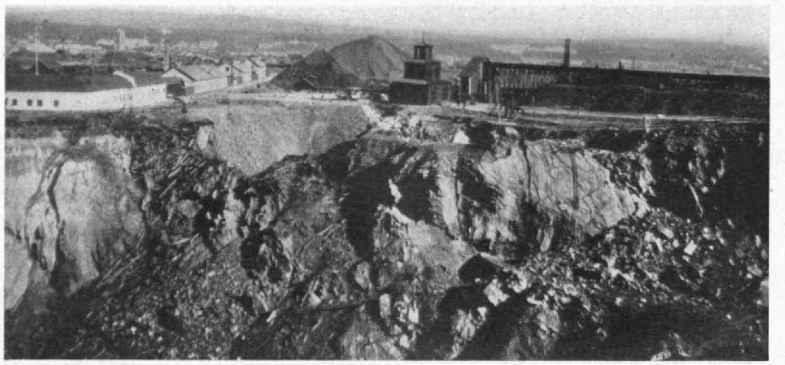
Ewing Galloway

STOCKHOLM FROM THE CITY HALL TOWER LOOKING DOWN ON THE PUBLIC BATH HOUSES

*I have purposely avoided stressing statistics. Many of the data as to production, and so on, are taken from the useful handbook entitled "The Sweden Year Book," published yearly in English.

has a population of 6,000,000, about the same as Illinois or Ohio. It has a climate ranging from temperate to cold. Not long ago it emerged from under the Quaternary ice sheet; except for some areas in the south the soil is rocky and poor. Even now it does not grow enough grain to feed its inhabitants; practically no wheat is raised.

At least 3,000 years ago the country was settled by Aryan Germanic people, known as the Svea tribe and the tribe of the Goths, the former leading politically. Hence the name of *Svearike*, contracted to *Sverige* and corrupted in foreign languages to Sweden or *Schweden* or *Suède*.



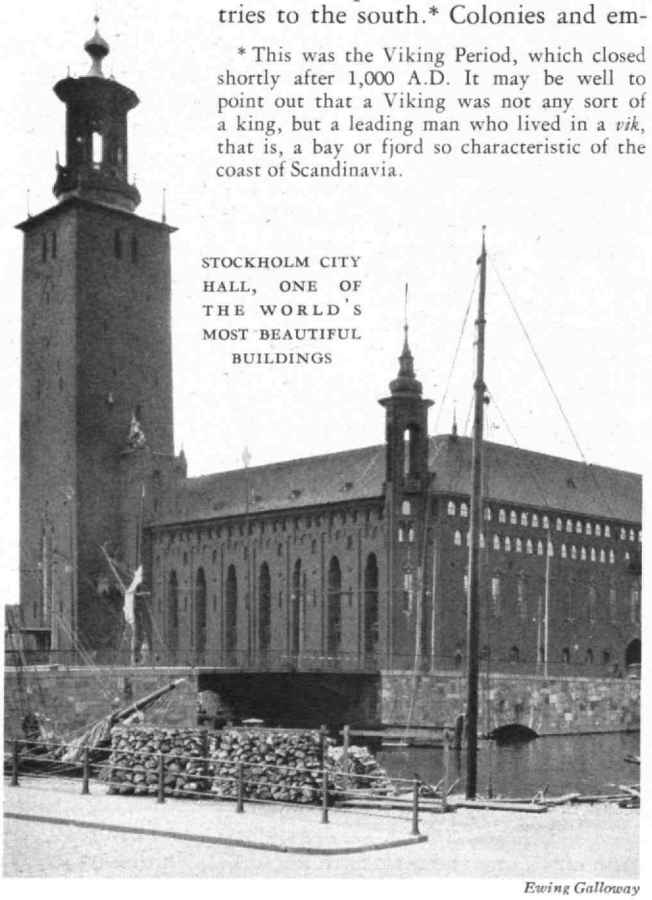
Ewing Galloway

GREAT OPEN PIT IRON MINES AT FAHLUN

Since earliest times Sweden has been a self-governing democracy under kings whose power was limited by assemblies. Every man owned the soil he cultivated. The serfdom of peasantry has never existed. This class of land owners, though diminishing, still makes the mainstay of the State. There are proud generations of this *bonde* class who have tilled the same farms for hundreds of years though still preserving their simple life. Gradually other classes developed: aristocracy, clergy, merchants. At the present time the elected Congress is divided in two chambers, in which all elements of the population are represented.

Through centuries, before the introduction of Christianity, about 1,000 A.D., the tribes made their living from the scant natural resources, but ever there was a tendency among the Scandinavians to push outward in wild and not always praiseworthy enterprises. They harried and plundered the richer countries to the south.* Colonies and empires were founded in Finland and in Russia as well as in England, Scotland, Normandy, and even Sicily. After a turbulent mediaeval history, Sweden broke into European politics and from 1630 to 1720 was one of the greatest powers of that continent, a glory dearly bought by exhaustion and impoverishment.

* This was the Viking Period, which closed shortly after 1,000 A.D. It may be well to point out that a Viking was not any sort of a king, but a leading man who lived in a *vik*, that is, a bay or fjord so characteristic of the coast of Scandinavia.



STOCKHOLM CITY HALL, ONE OF THE WORLD'S MOST BEAUTIFUL BUILDINGS

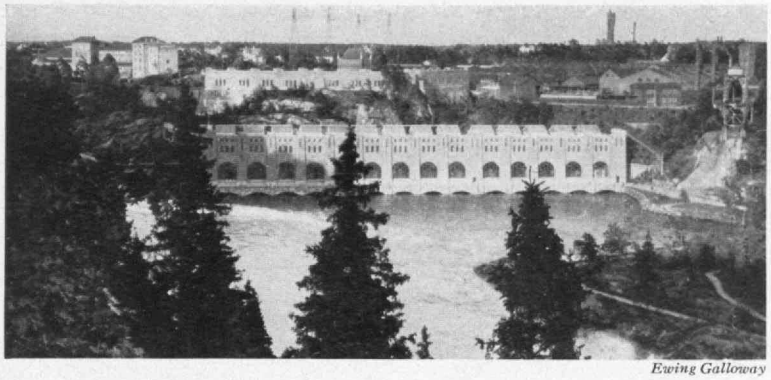
Ewing Galloway

Perhaps the first and strongest impression which a casual visitor receives upon entering Sweden is the homogeneity of the people. There is little admixture. Probably it is the purest Nordic race known. The Swedes are conservative: even with the present adverse factors, such as crowding to the cities, multiplying of the manufacturing population, and ensuing reduction of the birth rate, there is extremely little communism. The Socialists are strong, however, and getting stronger. Twice Sweden has had a socialistic or part-socialistic government, but it is a mild and sensible socialism with no threats of revolution and execution. It is easy to imagine the volumes of propaganda from the East, but so far it has had little effect. There is much freedom in Sweden — I should say considerably more than in our own country. Any Swede can get upon the soap box and propound his ideas short of murder and inciting to open rebellion. But if a foreigner should attempt to do this he would probably be deported very promptly.

For a long time Sweden has been a protectionist country. Manufactured articles have ever been expensive. The result is shown by the development, so that now more than half of the population is engaged in industries, transportation and trade.

Sweden is prosperous and the year just closed has been one of the best in its recent history. There has been some labor trouble, but there was little unemployment and the wages are high — higher than in most European countries. The wages of the building trades were abnormally high in 1929. The state finances are in an excellent condition and the banking system extremely sound. Perhaps it is not realized that the Government derives a splendid income from its railroads, its telegraph and telephones, and even (strange reading in the United States) from its postal department. Naturally there are some drawbacks in part already referred to. In close parallelism to our own conditions, the principal worry seems to be in relation to agriculture. The tillers of the soil claim that they can make no profit.

In proportion to the population the accomplishments of the Swedish scientists and engineers are second to none in the world. It is their victories I shall try to relate.



Ewing Galloway

DAM NUMBER 2 AT TROLLHÄTTAN, ONE OF SWEDEN'S INDUSTRIAL CENTERS

Basic Industries

IRON ORE, forests, and waterfalls, these are three foundations upon which much of the industrial development is based. Of fuels, coal and oil are present in negligible quantities; peat is abundant but seems difficult to utilize.

Iron Ore. Since mediaeval days the iron ores of Sweden have been famous for their high quality. Most of them occur in a belt in the central part of the country. They are smelted with charcoal to pig iron, the annual production, which is not increasing, amounting to about 500,000 tons. There are also other deposits of export ore; the largest is located at Kiruna, north of the Arctic circle, and contains an enormous quantity of high grade magnetite ore, at least 1,000,000,000 tons, carrying more or less phosphorus. These ores cannot be smelted with profit in Sweden, hence are exported to Germany, England, and to the United States. The ore is extraordinarily rich, carrying from 60 to 64% of iron, and about 9,000,000 tons are exported annually. In the Kiruna deposits the Swedish Government is part owner, and it controls the export. This mass of iron ore projects as a hill above the general level of the country and is mined in large part by open cut method. Electrified railroads carry the ore to the Swedish and the Norwegian coasts, the latter being ice free. The power needed is produced at the great falls of Porjus yielding 150,000 h.p.

The export is carried on by the *Aktiebolaget* Grängesberg-Oxelösund*, which also controls the southern export fields.

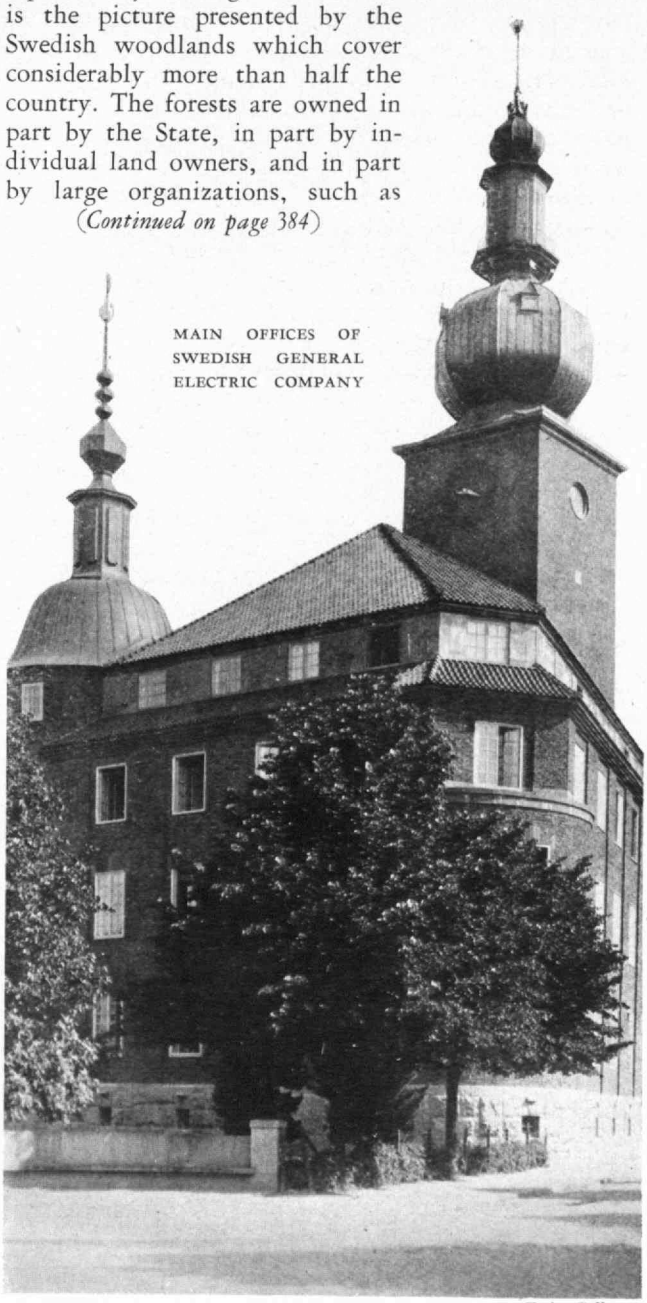
The mining of other metals is negligible; there is a well-known large zinc deposit at Åmmeberg, which is owned by a Belgian company, and extensive ore deposits rich in copper, gold, and arsenic have lately been found in northern Sweden. For centuries Fahlun was one of the most famous copper deposits in the world, the charter of its company dating back to about 1234 A.D.

Water Power. From the height of land and from the Norwegian frontier hundreds of swift rivers, with rapids and waterfalls find their way to the coast. They contain potentially, it is estimated, 4,000,000 to 6,000,000 horse power of which about 1,300,000 are utilized. One of the largest plants is that of Trollhättan with 150,000 h.p., and this like the Porjus is owned by the State. Dozens of smaller plants supply the electricity needed for industrial and home purposes. It is said that over 50% of the Swedish farms are electrified. The railroad line, Stockholm–Gothenburg, is already under electric power, the line Stockholm–Malmö will soon be. Just now the most pressing problem is to utilize the water power of Norrland for the wood pulp factories.

According to the plans of Kreuger and Toll the ten power plants at Hammarfors with 60,000 h.p. will be linked to the mills of the recently organized Swedish Cellulose Company by a line 186 miles long and carrying 70,000 volts. This will control 30% of Sweden's pulp mills and the concern is expected to control 250,000 h.p. In 1913 there were 1,449,000,000 kilowatt hours produced in Sweden. In 1928 it had risen to 4,410,000,000.

Forestry. Dark green forests of pine and fir mirrored in innumerable lakes; hills rising to ridges and mountains separated by rushing streams. This is the picture presented by the Swedish woodlands which cover considerably more than half the country. The forests are owned in part by the State, in part by individual land owners, and in part by large organizations, such as

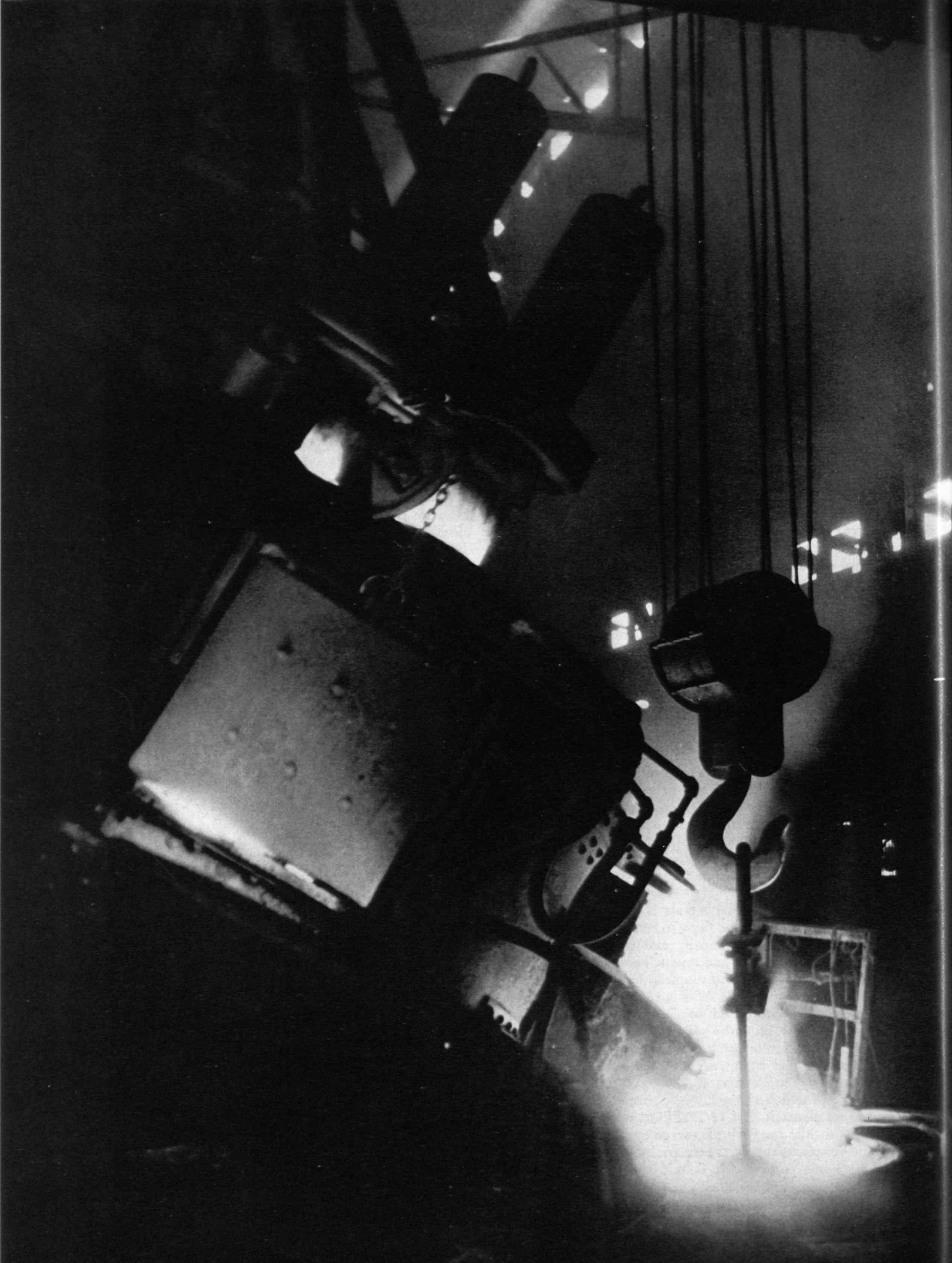
(*Continued on page 384*)



MAIN OFFICES OF SWEDISH GENERAL ELECTRIC COMPANY

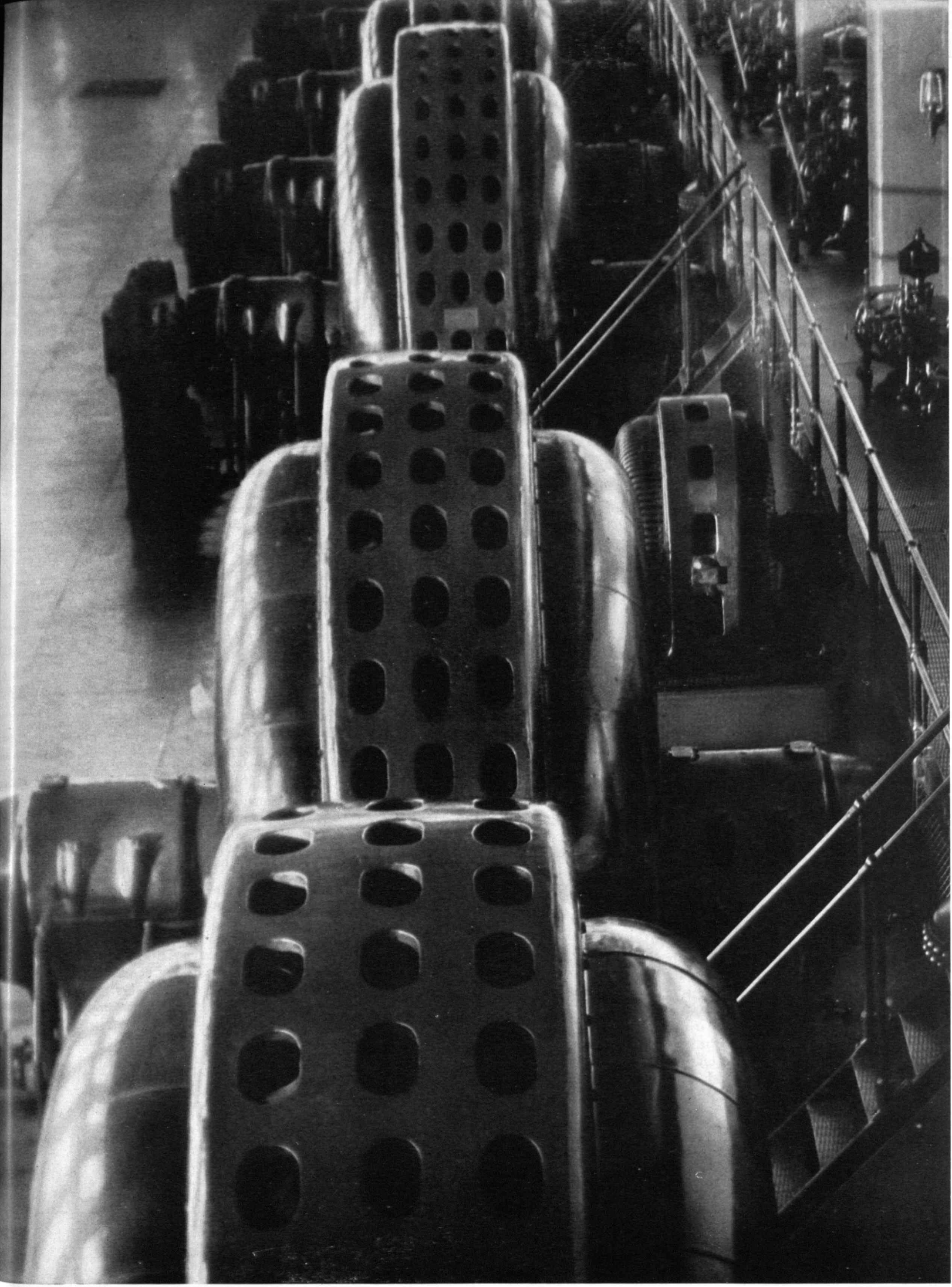
Ewing Galloway

* *Bolag* means company; literally household.



Margaret Bourke-White for Ludlum Steel Company

POURING A HEAT



Margaret Bourke-White for Niagara Falls Power Company

FIRST RESIDENTIAL SECTION OF RADBURN, ILLUSTRATING THE SUPER-BLOCK SYSTEM

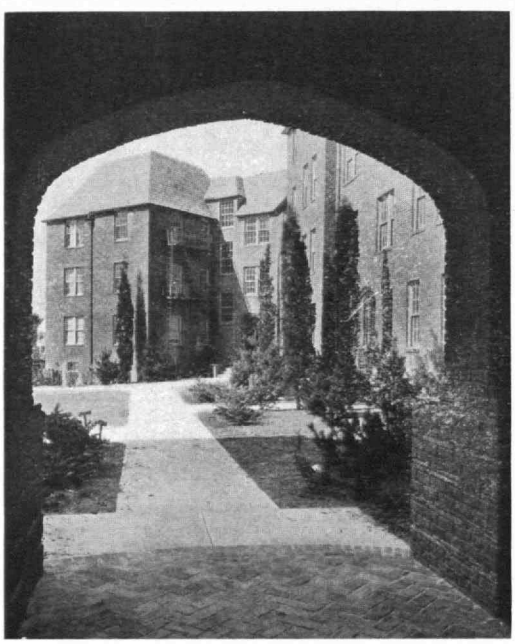
A TOWN FOR THE MOTOR AGE

Radburn, N. J.—A Notable Experiment in City Planning

By Henry M. Propper and Thomas C. Desmond

IS IT *lèse-majesté* to challenge the perfection of our big cities and the life pattern which they impose? Certainly some of their attributes are open to serious question. Their common denominator is a chronic traffic problem grossly wasteful for business, hazardous for men and women, and fatal for children's play. Equally characteristic is the lack of decent housing for the bulk of the inhabitants, the sort of housing which permits or encourages a rounded, healthy home life for the family. In most cities outdoor recreation must be worked for as earnestly as the daily bread and butter.

Easy, convenient, unrestricted flow of traffic is almost impossible in urban communities built upon the present plan. In attempting to achieve it cities are spending enormous sums in making over horse- and buggy-sized streets into automobile streets and by installing increasingly elaborate schemes for regulation and control of traffic movement. The relief obtained is often inadequate and usually only temporary, since two basic factors operate to check the extent to which such changes can be made, namely, the street pattern to which cities are irrevocably committed by existing buildings and the huge cost of cutting through new streets or widening old ones on land already built upon and loaded with city values.



AN APARTMENT COURT AT RADBURN

Some reason probably existed for planning cities on the checkerboard or gridiron street system. It may have been the convenience of 25 x 100 foot lots for real estate operators or it may have been the horse and wagon; be that as it may, it is the traditional, orthodox scheme and has been almost universally followed. Under the strain of modern motor traffic the checkerboard street system appears to have broken down completely. There are too many intersections, and therefore too many interruptions to movement in either direction. The joint use of streets by vehicular and pedestrian traffic has resulted in a major hazard to life for city dwellers and has restricted the free use of automobiles. This result is apparent in every large American city.

TO find means of eradicating these impediments from our urban communities and of solving these acute problems of city life, a full size laboratory experiment in town planning is now being undertaken by the construction of Radburn, a "Town for the Motor Age" between Hackensack, Ridgewood, and Paterson, New Jersey, about fourteen miles in an airline from New York City. The scale of Radburn, however, is greater than usual for experimental developments, for it includes a town site of 1250 acres, a plan for an ultimate population of between 25,000 to 40,000, with the necessary relations of dwelling houses or business buildings, and manufacturing establishments and an ultimate expenditure of over $60,000,000.

PEDESTRIAN UNDERPASS CONNECTING PARK SYSTEMS OF TWO SUPER-BLOCKS. CHILDREN CAN GO FROM ONE BLOCK TO ANOTHER WITHOUT CROSSING A TRAFFIC STREET

In spite of its proximity to New York City, the Radburn site had continued in agricultural use down to a little more than a year ago when the new project was begun. Only two or three roads traversed the tract and therefore the town planners had a free hand in applying a street pattern. They considered first the question of function or use, recognized the conflict inherent in the gridiron scheme, and as a first step determined on a redistribution of these functions in the residential districts of the town. For vehicular traffic they provided a system of broad avenues, having about four street intersections to the mile in place of the 16 or 18 common to the gridiron plan. For pedestrians they provided a separate system of walks entirely removed from the traffic ways and so linked by underpasses that the two did not come into opposition at any point.

The Radburn town planning scheme is based on the use of a unit, several times the size of the average city block, which for want of a better name we will call a super-block. Highways for vehicular traffic constitute the boundaries of the super-block and send in fingers or lanes toward, but not to, the center. These lanes are closed-end streets or *cul-de-sacs*, and most Radburn homes are grouped around them rather than on the traffic avenues. The center of the super-block, for approximately its entire length, is given over to a stretch of park ranging from five to seven acres in area. Fringing this park are sidewalks exclusively for pedestrian use from which fingers of concrete, also reserved for people afoot, extend out to the motor roads. The pedestrian walks are spaced so that they alternate with the closed-end streets. In driving along a main motor road one passes alternately, at intervals of about 100 feet, closed-end streets open to vehicular traffic and walks exclusively for pedestrians.

Radburn homes occupy these intervening spaces and face in one direction on a street devoted to wheel traffic and in the other on a narrower street designed for foot traffic only. The practice has grown of referring to Radburn houses as having two fronts and no backs, a motor front and a garden front. They have two front yards, two main entrances and face on two public thoroughfares, one for vehicles and the other for pedestrians.

At one point in the super-block, the central core of park land reaches out to the motor road, dives under it and connects with the park in one or more adjoining blocks by means of a pedestrian underpass. Since all of the parks and their contiguous walks are devoted entirely to pedestrians there is provided by this method a complete and practical circulatory system which makes it unnecessary to once cross a motor road in going from one point in the residential section to another. Pedestrian traffic encounters no hazards in Radburn.

SHOPPING CENTER AT RADBURN

THE full import of these changes can be judged best from their effect on the individual householder and his family. In the great majority of cases his house is on a *cul-de-sac* about 400 feet long or is one of the group closing off the lane at the park end. His home is quiet and peaceful, for the only traffic that passes his door is the traffic headed toward one of the not more than 20 houses in the lane. In no case is he more than 400 feet from the park or a like distance from a main motor road. The closer he is to one the further he is from the other but in no event is the distance more than 400 feet. His children can leave the house by the garden door, go along the walk to the park and thence to school, crossing the motor road by means of the underpass. With (*Continued on page 396*)

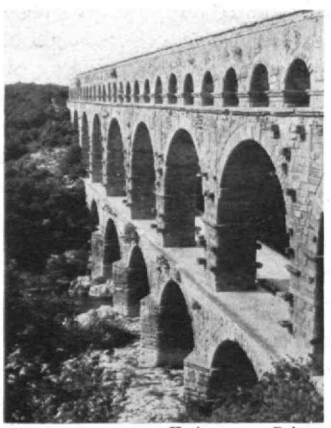
Fairchild Aerial Surveys, Inc.

LAKE CHAMPLAIN BRIDGE NEAR PORT HENRY, N. Y. FAY ['93], SPOFFORD ['93], AND THORNDIKE ['94], ENGINEERS

THE BRIDGE-BUILDERS

AMERICANS may well call themselves bridge builders. Monumental enduring structures daily grow more numerous: Lake Champlain has been crossed; the Hudson River and Poughkeepsie Bridges raise their towers aloft; the Detroit River has been spanned by the great Ambassador Bridge; the International Peace Bridge joins Buffalo with Canada; Arlington has its Memorial Bridge; Rhode Island its Mount Hope Bridge; Norfolk its James River Bridge. At least nine suspension bridges with channel spans greater than 1,000 feet, and one cantilever of 1,182 feet, already span American rivers, not to mention the many steel arch and simple truss structures with spans of 500 feet or more.

The American engineers working in steel are bold and skillful descendants of the great Roman and English pioneer bridge builders, who left so many audaciously permanent and beautiful masonry structures. It was not until 1777 that iron came to be used; in that year the British swung a span across the Severn with a cord of 100 feet, and an iron, semi-circular arch. Thirty-six years earlier Brooklyn Bridge was foreshadowed when a chain bridge was thrown across the Tees.



H. Armstrong Roberts

PONT DU GARD NEAR NIMES, FRANCE. AN AQUEDUCT BUILT BY THE ROMANS

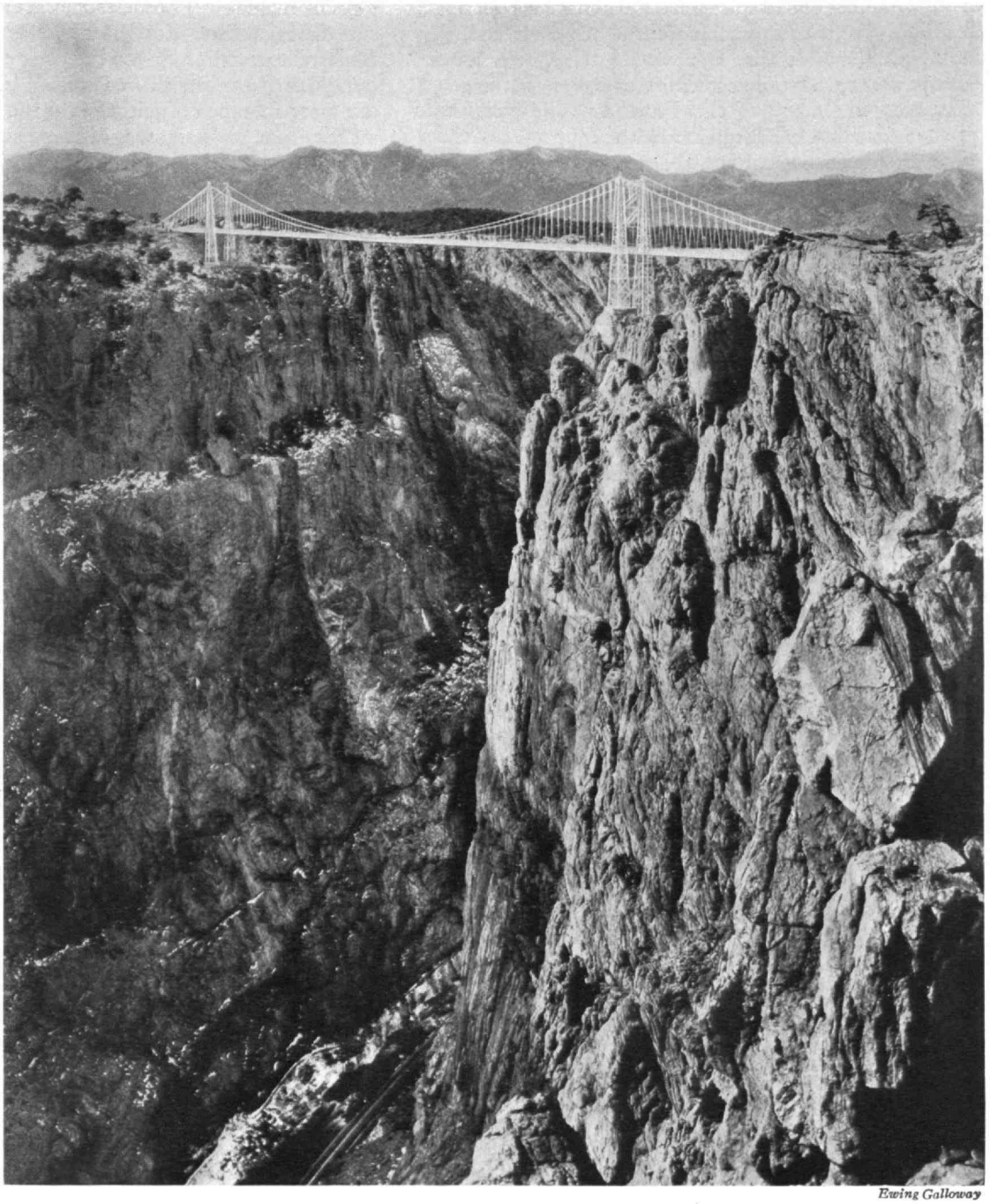
Historians have often pointed out the influence of bridges on the life of peoples, and in the Middle Ages their construction and care was considered a pious, holy work. In his admirable lecture, "The Commerce of Thought," Sir Arthur Quiller-Couch notes that: "A religious order of *Pontiffs* (Pontifices, bridge-makers) built bridges in many countries of Europe. The famous Pont d'Avignon was one;

Pont St. Esprit (still in use) was another. A bridge with a chapel on it was one of the most familiar features of medieval England — a chapel and a toll-gate — the church being no more averse then than now to 'take up a collection.' Old London Bridge, with a chapel on it — Old London Bridge which for centuries was the marvel of England — Old London Bridge which (mind you) remained until the middle of the Eighteenth Century, until Dr. Johnson's day, the *only* bridge spanning the Thames — was begun in 1176, finished in 1209, with its twenty arches, by subscription of the charitable."

Edwin Levick

BEAR MOUNTAIN BRIDGE ACROSS THE HUDSON

Cristian Barmam, in his charming essay on bridges in the new "Encyclopaedia Britannica" points out several times when bridges, had they been built, would have changed the course of history. The great River Severn, hemming in Margaret of Anjou, made it possible for Edward to capture her. Here in the United States the unbridged Chickahominy proved itself a mighty ally of Lee and foiled McClellan in his advance on Richmond early in the Civil War.



Ewing Galloway

NEW SUSPENSION BRIDGE ACROSS THE ROYAL GORGE OF THE ARKANSAS RIVER. IT IS 1,260 FEET LONG WITH A MAIN SPAN OF 880 FEET, AND IS 1,053 FEET ABOVE THE RIVER

PRESIDENT-ELECT

A Vignette of Karl T. Compton, Physicist and Educator

By J. Rhyne Killian, Jr.

ALREADY so much has been written about Dr. Compton — Karl Taylor Compton, Ph.B., Sc.M., Ph.D., Sc.D., as it will be indited in the Institute's Directory of Officers — that this new effort may be carrying coals to Newcastle. Any additional biographical material about him runs the risk, not only of repetition, but of flying into the face of the demonstrated fact that Dr. Compton eschews personal publicity. Last month while having a brief interview with him, I produced a number of newspaper articles about his coming to Technology, venturing to inquire about their accuracy in biographical details. One would have been impercipient not to have detected his aversion to them. "I have seen too many of those already," he countered, but he immediately added that he thought most of them were in the main correct. "I am afraid, however," said he, "that some one in my home town became too garrulous."

He was referring to the many stories about him which old residents of Wooster, Ohio, immediately remembered upon the announcement of his election to the Presidency of the Institute. His propensity for date pie; for Homer's "Iliad," and Scott's novels; the Homeric story of how he broke a tie in a football game in 1907 by the longest drop kick any Wooster football player has ever made; the yarn about his placing a class banner at the top of a new 140-foot smokestack; accounts of his skill as a baseball pitcher, mainly the result of his use of the almost-forgotten spitball — all of these anecdotes and many more were immediately salvaged from local folklore when the story "broke" of Dr. Compton's election. It is understandable that, to one of America's most accomplished physicists, these tales might seem irrelevant, but to those of us — which means the most of us — who are interested in knowing something of the non-professional side of the Institute's new President, they are valuable and illuminating facts. They satisfy our desire that a man who holds this high place should have that quality which Emerson once prescribed in his Journal — the ability to judge and admire a good barn as well as to master more abstruse subjects. Certainly Dr. Compton has always been fond of good barns. Since he has grown to maturity the concentration which he has applied to widening the boundaries of our physical knowledge has not served to exclude from his life those touches of nature that make the whole world kin.

A valuable benchmark in surveying Dr. Compton's career is the award in 1923 by Wooster College of its doctorate of science to him. In presenting the degree, the first honorary one given to its recipient, W. R. Westhafer, Professor of Physics, said:

"Karl Taylor Compton, teacher, scholar, scientist. Graduate of the College of Wooster in the class of 1908 and granted the Master's degree in 1909. Fellow in Physics at Princeton for two years; Doctor of Philosophy, Princeton, 1911, with *summa cum laude*, a rare distinction; Professor of Physics in Reed College for two years; Professor of Physics and Director of Research, Princeton, since 1917.

"During the war, Aeronautical Engineer for the Signal Corps of the United States Army, later Associate Scientific Attaché of the American Embassy in Paris. . . .

"Author of thirty-five papers published in this country and England covering a wide field of research in pure physics including Photoelectric Effects, Ionization, nature of Magnetism, Motion and Behavior of Electrons, all important contributions to the progress of modern physics and marking the author, still in his youth, as one of the most able men of science in this country.

"Eminent investigator, distinguished university lecturer, faithful teacher. Mr. President, Professor Compton has a special claim on our gratitude. Trained in this classical Christian college, he has studied science, and, guided by her spirit has searched to find the facts. He has honored his Alma Mater and today for him she speaks her highest word. In a very special sense he is one of us. Born on this hill, reared in the very shadow of these college walls, son of a father whose debt this college can never repay, true child of Wooster. I present him to you, sir, for the honorary degree of Doctor of Science."

At the time of receiving this degree, Dr. Compton was 35. Obviously the years from 1908, when he graduated from Wooster, until 1923 had been filled with industry and rich achievements. The drop-kicker and baseball player had become one of America's leading physicists, an important investigator in the fields of photoelectricity, ionization of gases, soft x-rays, spectroscopy in extreme ultraviolet, fluorescence and dissociation of gases, electric arcs, and types of gas discharge.

His work during the World War mentioned by Professor Westhafer, and glossed over by most of the newspaper reporters, was of great aid to the United States, and Dr. Compton speaks of it with obvious relish. For a period he worked in the Edison laboratories studying the propulsion of torpedoes. Later he turned to sound ranging and subsequently he personally designed one of the most important sound detectors used during the War. This work, which took him to Europe as an aeronautical engineer in the Signal Corps, threw him in association with the great English scientist, W. L. Bragg, whose father will probably be present at Dr. Compton's inauguration. During these years he gave much to the American cause, but no doubt the experience also had its rewards for him in the contacts he made. During the last ten months of the War he was in Europe as associate scientific attaché at the United States Embassy in Paris, as representative of the Departments of Military Intelligence, Naval Intelligence, and the Council of National Defense in matters pertaining to war inventions.

Since Professor Westhafer's remarks were made, Dr.

Compton has become Chairman of the Department of Physics at Princeton, and the increase in his research activities is indicated by the fact that the 35 papers mentioned by Professor Westhafer now total approximately 100, not to mention more than 100 more prepared by other men under his supervision.

His associations with the organized bodies of American science have likewise broadened. He was Vice-President of the American Physical Society from 1925 to 1927 and President from 1927 to 1929. Since 1927 he has been chairman of the division of physics of the National Academy of Science. He is a member of the executive committee of the National Research Council and of the American Association for the Advancement of Science. He is Research Associate of the Carnegie Institute of Washington and member of boards of advisors of several research organizations. He is chairman of the physics sub-committee of the National Research Council on the Chicago 1933 Exposition. Last month when he addressed the Faculty Club at the Institute he chose this latter work as the subject of his talk, a fact demonstrating his great interest in the humanization of science. Matthew Arnold has said, "The correct record for the outward life of a man is the clear consenting voice of all his contemporaries. . . ." These many recognitions that have come to Dr. Compton represent this clear consenting voice and attest to his great abilities as a scientist and his admirable qualities as a man. And he still is a young man, 42 years of age!

The election of Dr. Compton has called attention to the uniqueness of the family from which he came. All members of it have achieved distinction; it is a family of educators and research workers hardly equaled in American academic history. In an editorial, "Those Comptons," F. Lauriston Bullard of the Boston *Herald* recently apotheosized the father: "Almost a half century ago on College Hill at Wooster in Wayne County, Ohio — both county and city named for historic American patriots — a Presbyterian clergyman named Elias Compton built a home of the type traditionally held to be representative of much that is finest in America. . . . The father, by native bent a student, a specialist in philosophy, spent but little time in the pulpit, coming almost directly to the College of Wooster from the Theological Seminary. As 'Compy' he was known and liked by thousands of students in their college days. . . ."

Arthur Compton, youngest of the three sons, is a professor at the University of Chicago, and in 1927 won the Nobel prize in physics. The second son, Wilson M. Compton, spent several years in the public service, much of the time as an investigator for the Federal Trade Commission, and performed many missions for Mr. Hoover, then the Secretary of Commerce. Today Wilson Compton is Secretary and General Manager for the Lumber Manufacturers' Association.

The sister in India is the wife of Charles Herbert Rice, President of Ewing College in Allahabad. Such are the other three distinguished children of Elias and Otelia Augspurger Compton of College Hill, Wooster.

It is interesting to observe that both Drs. Karl and Arthur Compton were taught by Professor Owen W. Richardson, at Princeton, himself a winner of the Nobel prize. It is also revealing to note that Karl, like his brother, is one of the many great American physicists who have at one time or another been associated with the Ryerson Laboratory at the University of Chicago — Stratton, Millikan, Michelson, Jewett, '03, to mention a few, have some time during their careers worked there; Karl has lectured at the Ryerson Laboratory during two quarters and is, in fact, engaged to lecture there this summer.

The house built for Institute presidents, not only admirably befits that position and serves as a dignified center for academic social life, but in addition it is an admirable place for the training of children. It is well that this is true for Dr. and Mrs. Compton have three, ranging in age from three to fifteen (the oldest is by Dr. Compton's first wife who died not long after their marriage). Mrs. Compton is the former Margaret Hutchinson, daughter of Professor J. Corrin Hutchinson, Emeritus Professor of Greek in the University of Minnesota. Her academic background, of course, fits in beautifully with the academic occupation of her husband. When not occupied with the children, she has been active in social service work.

"Approachable" is an adjective invariably applied to Dr. Compton. The manner of his greeting is so unaffectedly cordial, his smile so disarming, his speech so decisive and unequivocal, that an interviewer is impressed by the exceptional hospitality with which he is received, and more, by the dispatch with which Dr. Compton disposes of his questions.

Before becoming President he is naturally disinclined to advance any ideas which he has about administrative policies. That he has, however, a clear and comprehensive conception of the Institute's work is shown in his happily composed letter on page 365, which he readily agreed to write when I suggested that the Alumni of the Institute would appreciate some expression from him. Note in that letter how well he voices the educational philosophy of the Institute's work. It becomes evident that Dr. Compton will be a President who can give voice to the Institute's ideals, who can carry its philosophy to the outside world, who can himself be a symbol of those things for which the Institute stands.

If he is not yet in a position to discuss policies and plans, he can talk about science, particularly physics. After giving me details for preparing the material presented above, he talked for a few minutes on the present state of physics and its possible future trend. The latest Einstein paper, he feels, is of no immediate or directly applicable importance but it is of great philosophic interest. The most important aspect of modern physics is the development of the quantum theory, a field which influences his own work in ionization and in the spectroscopy of the extreme ultraviolet. He commented on Dr. Mayer's article in the March Review, "Can Americans Be Scientists?" expressing agreement with Mayer's contention that America's scientific accomplishments equal those of any other country. It was unfortunate, for me at least, that when he was describing the nature of the work being done by Dempster, Davisson, and others that a caller interrupted.

On June 6 and thereafter, however, he will be able to speak for himself and the Institute will have one of the youngest American college presidents.

THE TREND OF AFFAIRS

New Musical Instrument

THE REVIEW is privileged to announce the development, in the laboratories of the Institute, of a new, manually-played musical instrument which produces its sound by electrical vibrations controlled by a pianoforte keyboard. This significant instrument, entirely unique in its musical capacities, can produce, not only the sound of existing instruments, but, of more importance to the musical world, can create sounds and effects beyond their range.

The new medium, to which no name has yet been given, has been evolved by Arthur C. Hardy, '18, Associate Professor of Optics and Photography, with the assistance of Sherwood F. Brown, '23, Instructor in the Department of Physics. The work was made possible by du Val R. Goldthwaite, of New York City, who conceived the broad invention and supplied the funds for its development.

Davis

SHERWOOD F. BROWN, '23, AT THE KEYBOARD OF THE NEW MUSICAL INSTRUMENT ANNOUNCED ADJACENTLY

The first model, which was initially played several months ago, has a three-octave piano keyboard and the sound it produces is made to simulate the sound of an organ. By changing the wave form on the disk described below, the sound of a clarinet, oboe, violin, or any wind or string instrument may be produced by playing the keys, piano fashion.

To the reproduction of the sound of all these instruments, the device contributes in every instance some additional effect of great value to the musician. In an organ, it is impossible to accent important notes in a phrase, and, in an effort to minimize this drawback, the organ builders have had greatly to elaborate and complicate the instrument by adding swell organs, together with Great, Choir, Solo, and Echo manuals. In the electrical instrument, however, the amount the key is depressed affects the intensity of the note produced and consequently notes may be accented. This result, only approximately obtainable from an organ's expensive complications, thus may be fully achieved simply and inexpensively.

It is unthinkable that either vibrating strings or air columns as employed in most existing instruments can produce all of the most pleasing musical sounds. A new instrument, such as Mr. Goldthwaite's and Professor Hardy's, utilizing the more versatile light and electrical vibrations, may fill in the gaps and create new musical tones which are, or may become, pleasing to the ear.

Versatility is by no means its only superiority. Apart from the inability of most instruments to play in the natural scale, there is generally a change of pitch when the force is altered with which the instrument is played. This may spoil an harmonious combination of notes desired by the composer. In addition there is always the difficulty of tuning instruments exactly and keeping them in tune. Mr. Goldthwaite and Professor Hardy have avoided all of these limitations.

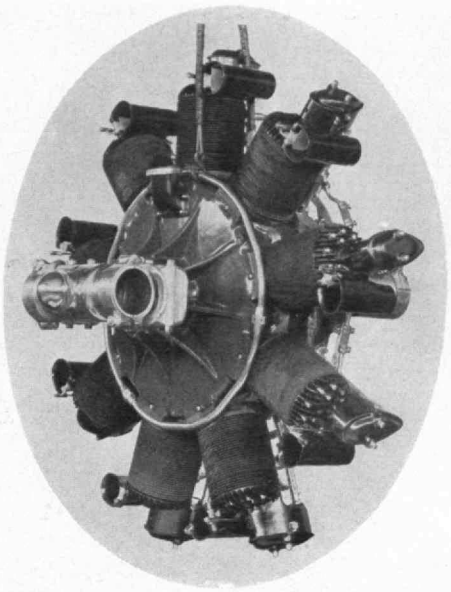
THE HEART of the instrument is an opaque glass disk on which are recorded photographically a number of concentric sound tracks (circular, wavy, transparent lines) through which light may pass. This disk is rotated rapidly with a photoelectric cell on one side and a small lamp on the other side. Light from the lamp is allowed, by controllable shutters, to pass through the transparent sound tracks on the disk after which it enters the photoelectric cell and there generates corresponding electric current variations. These currents are then amplified and converted into sound through the use of an electrically controlled vibrating diaphragm. The shutters which admit the light of the small lamp to the rotating disk are placed in front of the many sound tracks on the disk, one in front of each track, and they are operated by depressing the proper key on an ordinary piano keyboard.

At a constant speed of revolution of the disk, the pitch of each note is determined by the number of waves on each sound track. This makes it possible to play in the natural or diatonic scale, since the key can be altered by changing the speed of the disk. The quality of timbre of the sound may be varied by changing the form of the wave which constitutes the transparent sound track on the disk. The player of a flute or other wind instrument can sound only one note at a time, but the Goldthwaite-Hardy instrument permits any desired combination of notes within the range of the fingers of both hands.

The instrument now in use employs a disk with a wavy sound track derived from an oscillograph analysis of the tone of a large organ pipe. That wave form, which may be represented by a line with many humps in it, was cut out in the form of a template and inserted in a special machine built for transferring that graphical reproduction of sound to circular sound tracks. Professor Hardy designed his instrument to make it easy to change disks, and the inexpensiveness of the disks makes it feasible to have numbers of them, each representing some instrument or tonal range. These disks, of course, both in construction and fundamental principle, are utterly different from phonograph records and should not be confused with them.

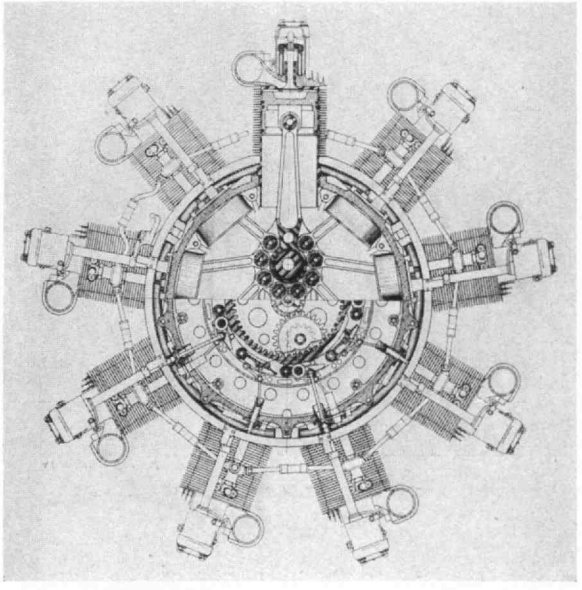
In no way is there a resemblance between this electrical instrument and that popularized by M. Leo Thérémin (See The Review for December, 1928). In the Thérémin-Vox electrical oscillations are controlled both in pitch and loudness by the movement of two hands within the electrical field of two condensers. The Thérémin-Vox is hardly ever exactly in pitch; Professor Hardy's instrument can never be out of pitch.

Those who have heard the instrument, occupying a space no larger than the top of an office desk, have been astonished, not only by its fidelity to the organ and by its own unique individuality as a musical instrument, but by its simplicity. Even with its multiplicity of effects it is hardly more complicated than a radio with a keyboard attachment.



Courtesy Boston Evening Transcript

NEW PACKARD 225 H.P. DIESEL ENGINE, THE FIRST SUCCESSFUL AMERICAN ENGINE OF THAT TYPE



HISTORIANS of music have always pointed out that its development is parallel with the instruments through which it finds utterance. Innovations in music must be accompanied by new instruments or improvements in old ones, as Bach, Beethoven, and Wagner proved in their new musical forms. Since their day, musicians have had almost no new instruments with which to increase their range. Now the application of science to the production of music promises to place at the disposal of the musician resources of which the great masters never dreamed. It is possible that a musician composing for an instrument like that developed here at the Institute might do away entirely with the present system of musical notation with its many limitations and instead write in terms of sound waves.

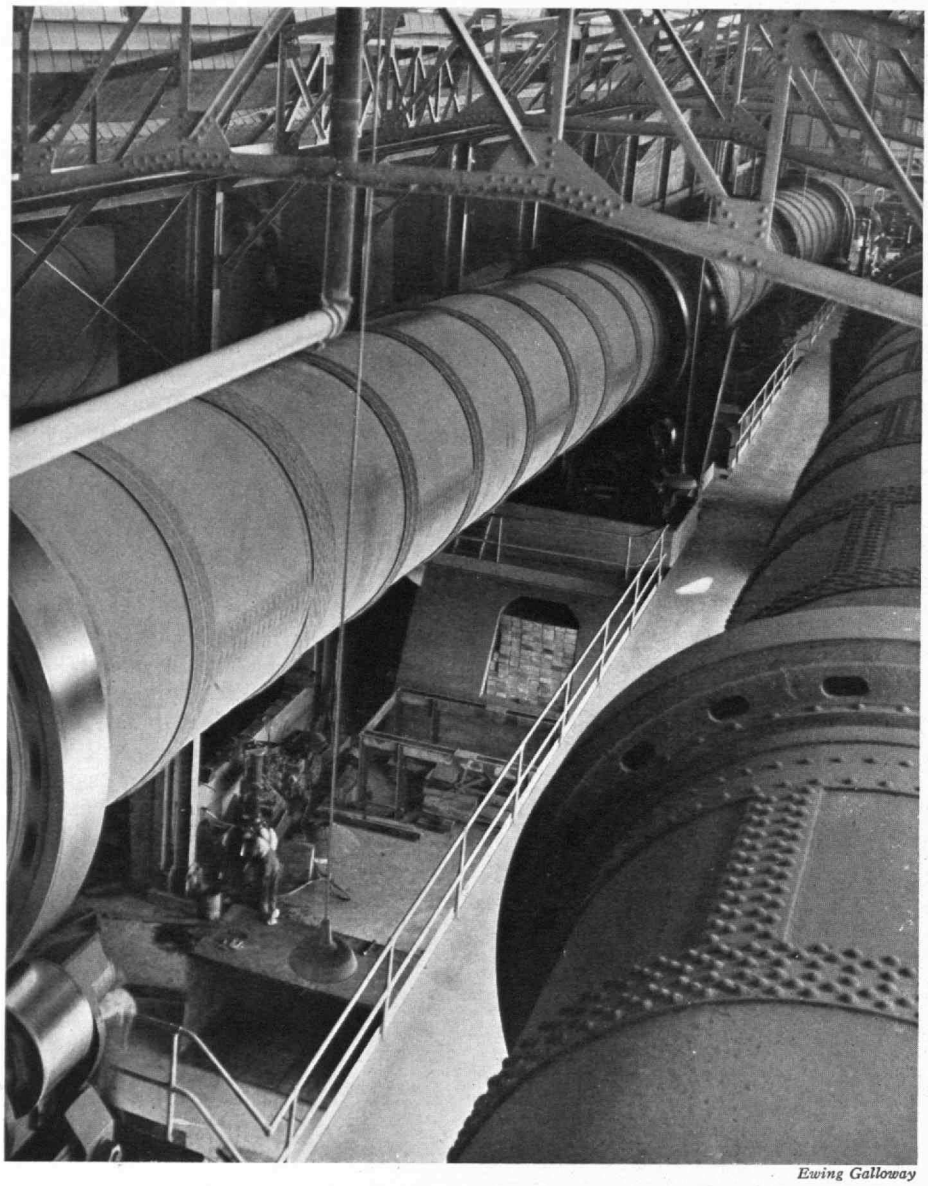
Deems Taylor, composer of the opera, "The King's Henchman," while speculating on the possibility of the phonograph several years ago, envisioned the composer writing directly for that instrument in terms of the wave lines on its records. His prophecy applied to the Goldthwaite-Hardy instrument here at the Institute is equally apt: ". . . The composer, untrammelled by the technique of instruments, will prescribe all producible timbres in whatever pitches and rhythms he pleases, and will have no more direct coöperation with the craftsman who models the phonographic wave lines than the violinist may with Stradivarius. The crude beginnings of this new method of composition will be enormously important."

To produce musical tones electrically, even by utilizing light variations, is not a new ambition. The apparatus developed at the Institute, both for recording and playing, seems simple, effective, and thoroughly operative and the method employed appears to have solved the problems which made previous schemes seem impracticable.

Diesels for Airplanes

LAST MONTH brought announcements of two new airplane engine developments and incidentally revealed a competition in engineering design between two great engine manufacturers. The Packard Motor Company with its 225 h.p. radial Diesel in point of time won first honors, but the Pratt and Whitney Aircraft Company with its versatile new fuel system applicable to all internal combustion engines may conceivably have made a greater contribution to aviation, despite the fact that the Packard announcement came first.

The Packard engine is of the radial air-cooled type, having 9 cylinders with a bore of 4 13/16 inches and a stroke of 6 inches. The outside diameter of the engine is slightly over 45 inches, and it is attached to the mounting ring with 8 ⅜-inch bolts arranged on a bolt circle of 22 inches diameter. While not as light per horsepower as gasoline ignition engines, it is far superior to any other Diesel heretofore developed in this country. It runs at 1,900 r.p.m. and is capable of more than 2,000 r.p.m.



Ewing Galloway

GREAT COOKING KILNS IN A STRAIGHT-LINE PORTLAND CEMENT PLANT WHICH USES OYSTER SHELLS AND MUD MIXED WITH GYPSUM

whereas most Diesels are able to turn up only about 300. At 1,900 revolutions it produces 225 h.p. and its weight is but 510 pounds. It is priced at $4,050.

The feature of the new Pratt and Whitney Fuel System is a tiny atomizer which sprays the fuel into the cylinder, where it mixes with the air from the intake valve. In this it is somewhat similar to the Diesel, but here the resemblance stops, save in the fuel range, from which choice can be made.

Fuel is sent to each cylinder through separate lines, driven at high pressure by pumps, and these lines feed the nozzle or atomizer which, in the present engine, is fixed in the head of each cylinder. The throttle controls both the fuel stream and the air to the intake valve. The atomization device is patented by Stephen A. Hasbrouck, one of the Pratt and Whitney engineers, and other patents are pending.

"The application of this device is not limited to aviation," commented George J. Mead, '16, Vice-President of Pratt and Whitney. "It might well be applied to all forms of internal combustion power plants, including farm tractors and heavy trucks."

Tests have been made on automobiles with the new invention and a Model-T Ford equipped with it has been driven 6,000 miles using many types of fuel. It can be attached to the conventional type of air-cooled radial motor and its tests have been made using a 450 h.p. Wasp motor. One feature of great importance, revealed during tests, is that the motor continued its even explosions in an inverted position, an accomplishment of the new fuel system not characteristic of the ordinary carburetor systems.

Science and the Front Page

AN ARTICLE with the above title, published by The Review in December, surveyed science's manifold contributions to news dissemination and prophesied that the telegraph printer and the teletypesetter would not for many years hold their positions as the most advanced transmission devices for the printed word. The truth of that prophecy was indicated last month when a complete page of a California newspaper was read in Schenectady three hours after it came off the press in San Francisco.

This feat was accomplished by a radio facsimile transmitter developed by Dr. E. F. W. Alexanderson of the General Electric Company. The reproduction was made by a new type automatic carbon recorder connected to short wave receiving equipment. The recorder which was developed by Charles J. Young, son of Owen D. Young, Chairman of the Board of General Electric, can be attached to any radio receiver. It prints on a narrow roll of paper which moves through the machine at about one-half inch a minute. The newspaper was reproduced in full size by building it up from narrow strips.

Although this is the first time an actual newspaper page has been broadcasted and reproduced, facsimiles of handwritten messages and other simple forms have been transmitted by radio for some time. In June, 1927, Richard H. Ranger, '11, of the Radio Corporation of America, demonstrated one of the first machines for receiving and reproducing pictures. This was given before the Technology Clubs Associated at the late lamented Waldorf-Astoria. Filching messages from the air from all parts of of the world, Mr. Ranger's machine turned out on rolls the Technology *Radio News*.

Power from the Sea

PERSISTENT, resourceful, wealthy is Georges Claude, French chemist of neon fame. Years passed after he developed his famous neon tubes before he convinced doubting Thomases of their commercial value. Now they are unescapable, their serpentine coils luridly lighting cities all over the world.

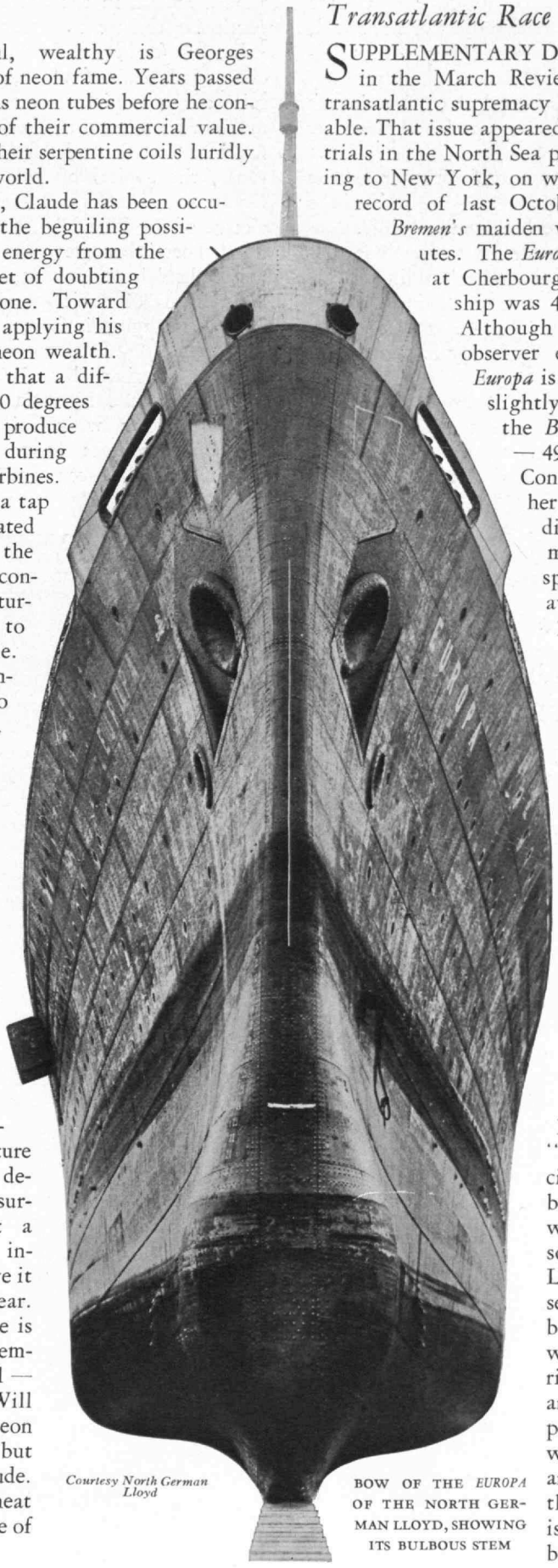
One purpose accomplished, Claude has been occupied for several years with the beguiling possibility of utilizing thermic energy from the sea, of proving to another set of doubting Thomases that it can be done. Toward this end he is aggressively applying his Gallic persistence and his neon wealth.

Briefly stated, his idea is that a difference in temperature of 20 degrees centigrade is sufficient to produce steam, to condense it, and during this process, to propel turbines. Using drinking water from a tap and a little ice, he once operated a turbo-generator before the *Académie des Sciences*. The condensing effect of ice on the turbine exhaust was sufficient to give him a usable heat cycle.

Indifference to this demonstration impelled him to something more spectacular. He went to Ougrée, Belgium, on the Meuse, and built there an experimental turbine of 60-kilowatt capacity. Utilizing an 18 degree difference of temperature between surface water and water deep down, he ran his turbine, according to his report, at 6,000 r.p.m.

That trite but incisive flaunt, "impractical," was still hurled at him. Consequently he boarded his yacht and sailed to Cuba, there to discover near Matanzas a difference in temperature of 20, and sometimes 30, degrees centigrade between surface water and water at a depth of 1,500 feet. He installed his plant only to have it accidentally disabled for a year.

Reports now come that he is persisting in his efforts to employ this temperature fall — "as good as a water fall." Will it prove to be another neon success? Skeptics abound, but they are only bait for Dr. Claude. He calmly insists that solar heat is the only worthwhile source of power.



Courtesy North German Lloyd

BOW OF THE *EUROPA* OF THE NORTH GERMAN LLOYD, SHOWING ITS BULBOUS STEM

Transatlantic Race

SUPPLEMENTARY DATA to the extended comment in the March Review upon the competition for transatlantic supremacy in speed and size is now available. That issue appeared as the *Europa* was undergoing trials in the North Sea preparatory to her initial crossing to New York, on which she bettered the *Bremen's* record of last October by 18 minutes, and the *Bremen's* maiden voyage of last July by 36 minutes. The *Europa's* time from the breakwater at Cherbourg to Ambrose Channel Lightship was 4 days, 17 hours, 6 minutes. Although called sisters (and to the casual observer exact twins externally), the *Europa* is slightly more powerful and of slightly greater draft and beam than the *Bremen*, but her tonnage is less — 49,746 compared with 51,655. Contary to a first report, which her captain denied, the *Europa* did not average 30 knots or more at any period. Yet, despite heavy seas and winds, she averaged 27.91 knots, or about 32 miles per hour, as compared with the 27.86 of the *Bremen*. The *Europa's* best day was her second when she averaged 29.01 knots and logged 703 nautical miles. Officials of the North German Lloyd are confident that within a year both ships will be capable of 30 knots, but no attempt to better 28.5 as a regular scheduled speed seems probable until rivals place newer and faster steamers in service.

Since the March Review, however, further indications of impending competition are apparent although the London *Times* reports that "the White Star Line has decided to defer the competition by the *Oceanic*." The *Oceanic*, it will be remembered, has been somewhat of a mystery ship. Laid down at Belfast, Ireland, several years ago, her plans being closely guarded, they were claimed to have been materially altered upon the appearance of the *Bremen*. Now it appears she is to be "deferred," whatever that may mean, but another report from London is that several of the greatest British ship-building firms have been invited by the Cunard

people to submit tenders for the construction of a giant express liner. While reticent on the subject of her speed, Cunard officials do not deny that something like a minimum of 28 knots is aimed at for this super-*Mauretania*. She is expected to be more powerful than the aircraft carriers U.S.S. *Lexington* and *Saratoga* and her passenger capacity is to be 4,000.

No additional plans for what are, for the present at least, designated as *Leviathan II* and *Leviathan III* of the United States Lines, Inc., have been made public. Nor has the French Line had much further to give out concerning the super-liner reported to be building at St. Nazaire. However, with April came the laying down of the keel of the *Rex* at Genoa. This 47,000-ton Italian offering is designed to compare favorably in speed with the *Europa* and the *Bremen*.

The arrival of the *Europa* at New York was given further significance by the announcement of a merger between the prewar rivals, North German Lloyd and the Hamburg American Line, in the form of a 50-year "commercial alliance," control of each company to remain with its present officers. This brings 444 ships of 2,446,750 tons into a formidable combination, the third largest mercantile unit in the world. First and second largest are British: the Royal Mail group (which includes the White Star) with 532 ships of 2,675,757 tons; and the "P. & O." group (Peninsular and Oriental Steam Navigation Company) with 437 ships of 2,492,018 tons.

Blue Nile Harness

ADVICES that final agreements have been signed between the British and Abyssinian governments whereby an American engineering firm, the J. G. White Construction Company, is to build the great dam to control the headwaters of the Blue Nile, indicate the settlement of a vexatious problem on which depends the future of Egypt and Sudan. This outcome was forecast in November, 1927, but by treaty, Abyssinia could not conclude the contract without Great Britain's approval. Action by the MacDonald Ministry guarantees the bonds to be issued by the American concern through agreement to pay water taxes for fifty years, control of the dam title to rest with the Abyssinians. Construction is expected to begin next October. Overcoming Britain's natural feeling that the award of such a large construction project should remain in the hands of her own nationals is a particular tribute to American engineering enterprise.

Egypt's fertility and prosperity depend upon the Nile, one main branch of which, the White Nile, is fed by the rains of the tropics and steadied in volume by receiving much of its water through vast head reservoirs, the large lakes of East Central Africa. Into this branch at Khartoum, the capital of the Anglo-Egyptian Sudan, and Omdurman, the former Mahdist capital, pours the discharge of the Blue Nile, clear and blue except when in flood. Then it becomes chocolate-brown from the mineral matter held in suspension, for its rate of flow increases often from 200 cubic meters per second to over 6,000. This latter figure is from four to six times that of the White Nile.

Down the river about 1,000 miles from Khartoum, at the head of the First Cataract, is the Assouan Dam, 6,400 feet long, which, since 1902 has impounded the waters to protect lower Egypt. It cost 3,000,000 pounds and between 1907 and 1912 it was raised

Ewing Galloway

LOWER PART OF A GREAT BLAST FURNACE AT YOUNGSTOWN, OHIO

Weyhe Galleries

FROM A LITHOGRAPH BY LOUIS LOZOWICK, PORTRAYER OF INDUSTRIAL SCENES

23 feet at a further cost of a million and a half pounds. Its present capacity is 2,400 million tons of water.

The country, El Gezira, enclosed in the angle between the White and Blue Niles is the most fertile portion of the Sudan and to develop it the Sennar Dam, on the Blue Nile about 200 miles above Khartoum, was completed in July, 1925, at a cost of six million pounds. As a reservoir its capacity is a fourth that of the Assouan Dam but its length, 9,900 feet, makes it the longest in the world. To supplement the Sennar Dam is the function of the projected dam near Lake Tsana (or Tana), for which the Blue Nile or Abbai, as it is known in Abyssinia, is the outlet.

Lake Tsana, in area about a tenth again as large as Lake Erie, is over a mile above sea level and the Abbai flowing from it drops over 4,400 feet in the 850 miles to its confluence with the White Nile. Three technical missions, the first in 1903, the second in 1916, and the last in 1920–1921, investigated the feasibility of using this lake as a reservoir to control the Blue Nile for the irrigation needs of the Sudan. They concluded that it was possible to provide a system of works to secure more even distribution of the water during the year and, in addition, store surplus water in years of heavy rainfall to form a reserve of 8,000 million cubic meters.

Abyssinia, visited in 1698 by a French physician and in 1769 by James Bruce, an Englishman who was looking for the sources of the Nile and who saw Lake Tsana, received little world-wide attention until its war with Italy under Emperor Menelik II, in 1895–1896. As a result of that conflict Abyssinia's absolute independence was recognized and treaties with other nations followed. Of these were one concluded with England in 1902 and the commercial agreement of 1903 with the United States. The first delimited the Sudan-Abyssinian frontier and by its terms Menelik agreed not to obstruct the waters of Lake Tsana or the Blue Nile without the agreement of Great Britain.

Abyssinian feeling that, if the Lake Tsana dam were to be an exclusively British proposition in its construction it might lead to British aggression, was supported by the present king, Ras Tafari, who obtained membership in the League of Nations for his country in 1923. Anxiety over the irrigation needs of the Sudan undoubtedly led the Labour Government of Britain to concede the point and yield assent to the building of the dam by Americans.

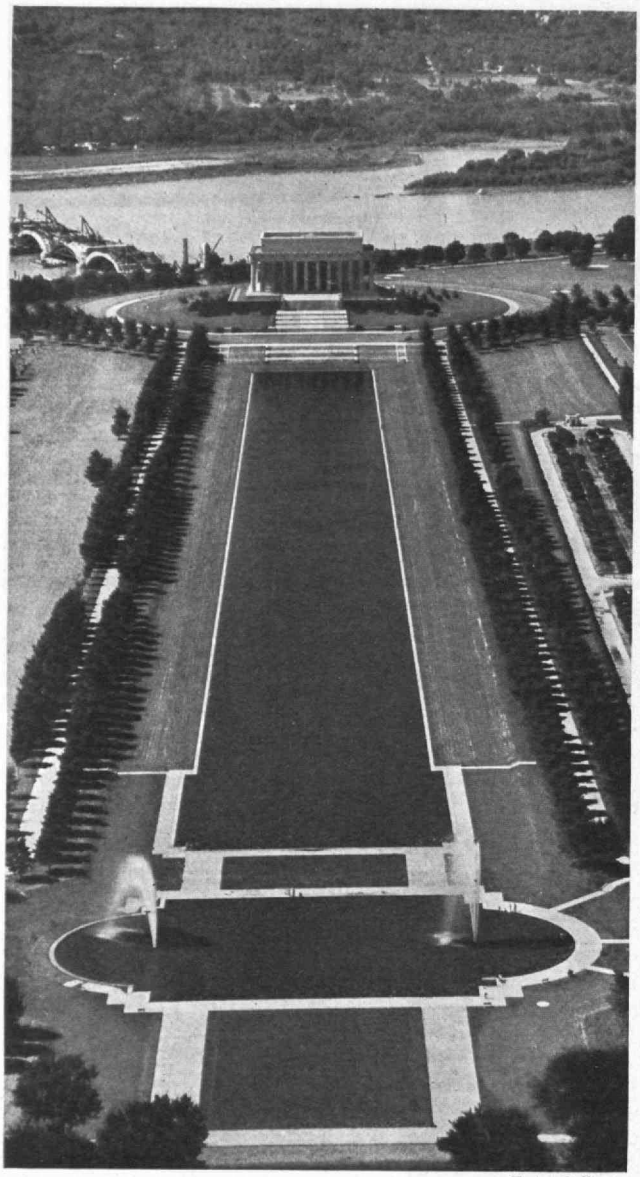
Columbus Memorial

DETAILED specifications of the conditions that will govern the second stage of the Columbus Memorial Lighthouse competition are to issue shortly from the permanent committee of the Pan-American Union. On the basis of these conditions the ten competitors who were successful in the original world-wide elimination contest, will submit entirely new designs for final judgment. Four of the ten are Americans: Will Rice Amon, '23; Helmle, Corbett and Harris; Donald S. Nelson, '26, and Edgar Lynch; and Douglas Ellington. Of the others, France has two and Germany, Italy, Spain, and England each have one representative.

The proposal to honor the memory of Columbus by the erection of a lighthouse on the coast of Santo Domingo, or Isla Española, took form at the Fifth Pan-American Conference in 1923 at Santiago, Chile. The international jury will meet in 1931 in Rio de Janeiro to make the final selection, the winner, in addition to being declared architect of the lighthouse will receive a prize of $10,000.

Preservation Victory

CONCLUDING a spirited political fight in Kentucky, scenery preservationists have triumphed in the contest to accept the offer of former Senator Coleman du Pont,



Ewing Galloway

LINCOLN MEMORIAL AS SEEN FROM WASHINGTON MONUMENT. BEYOND MAY BE SEEN A PORTION OF THE NEW ARLINGTON MEMORIAL BRIDGE. SEE PAGE 352

'84, to buy for his native state the site of Cumberland Falls as a public park. Passage of the bill by the Democratic-controlled legislature over the veto of Governor Sampson, a Republican, thus rids the Federal Power Commission, without action on its part, of a thorny issue which has been before it many months.

Cumberland Falls, except Niagara, is the largest cataract east of the Mississippi. Mr. duPont offered $230,000 to buy the Falls and 2,200 acres adjoining to form a public reservation. The Cumberland River, a large southern branch of the Ohio, meanders some 600 miles through Tennessee and Kentucky, above the Falls, mostly as a mountain stream of little volume in the dry months. At the Falls, which are in Whitley County, Kentucky, it drops precipitously 63 feet and then flows in rapids for ten miles through a gorge with cliffs 300 to 400 feet high.

Opposition to the acceptance bill, and to a companion measure giving the State Park Commission condemnation powers, for the property is now privately owned by the Cumberland River Power Company, came through the efforts of the Cumberland Hydroelectric Company, an Insull subsidiary, to obtain a Federal license to erect a power development at the Falls. Residents of the region are said to have favored the Insull proposition because of the industrial development which might ensue and there is, of course, the possibility that litigation may be attempted to contest the constitutionality of Kentucky's exercise of eminent domain.

Barring this, however, it seems that advocates of scenery have won as they did a year or so ago in the case of the Royal Gorge of the Arkansas River. As the *Electrical World* says, "Perhaps the moral is that developers of hydroelectricity must go slow in such locations, however strongly convinced they may be that power is not necessarily destructive of beauty."

Radium Decay

FEARS aroused by the experiments of one L. Bogojavlensky, indicating that the rate at which radium and allied substances decay into other elements may be made to change, have been allayed. For Madame Curie, who with her husband, Pierre, in 1902, discovered radium, has said she is unable to find any evidence to indicate such change is possible.

In short, radium is going right along decaying at the same old rate of 1,750 years for half a given quantity. It is the custom of scientists in expressing the disintegration of the elements of the radioactive series of uranium to speak in terms of the half-period, or the time required for the disintegration of half a given amount. And in this respect it is interesting to note that the time required for the change in the elements concerned varies from one-millionth of a second to eternity.

Out of the work of the distinguished English scientist, Sir Ernest Rutherford, and Frederick Soddy, one-time member of the staff of McGill University in Montreal, has come some understanding of the disintegration of the radioactive elements. When, for instance, radium emits helium there is produced another gas, radium emanation or radon. The latter, radioactive in its own right, undergoes still further disintegration. So radium, it seems, occupies an intermediate niche in a long series which begins with uranium and ends with lead. The latest market quotation on radium is $65,000 a gram.

Transatlantic Zeppelin Service

THE day when passengers may cross the Atlantic by airships operating on a regular schedule draws nearer with the announcement by Dr. Hugo Eckener, commander of the *Graf Zeppelin*, that organization of the International Zeppelin Transport Company has been completed. Details of operation are being worked out with the prospect that definite plans for transatlantic service will have been completed by the end of this year.

Paul W. Litchfield, '96, President of the Goodyear-Zeppelin Corporation of Akron, has been elected President of the new transportation company. That lighter-than-air transportation for long distances over the seas

holds very tangible commercial possibilities is indicated by the character of the organizations interested in the enterprise. Among them are the National City Bank of New York, the United Aircraft and Transport Corporation, the Union Carbide Company, the Aluminum Company of America, and the Goodyear-Zeppelin Corporation.

Some of the ships will be built in this country and others in Germany. The two great Navy ships now under construction at the plant of the Goodyear-Zeppelin Corporation at Akron will be 780 feet long with a helium gas capacity of 6,500,000 cubic feet.

Dr. Eckener indicated that some location in Spain, possibly near Seville, would be chosen as the European terminus of the proposed air line. Because of weather conditions on the Atlantic coast, he indicated that the American air terminal would necessarily have to be located no further north than Baltimore.

The fact that the United Aircraft and Transport Company already operates a subsidiary airplane line from Canada to Mexico, and from the Pacific coast to Ohio, indicates the possibilities of connecting air lines in this country, while in Europe there undoubtedly would be a similar arrangement providing quick transportation by airplanes to the leading capitals of the continents.

Weather Robots

AUTOMATIC weather stations, established on the lonely ice fields of the Arctic, and equipped to make their own observations and transmit them three times a day, are proposed by Dr. Fridtjof Nansen, leader of the International Society for Exploration of the Arctic Regions.

Under Dr. Nansen's plan these meteorological robots would be set up by aircraft at widely separated points on the Arctic ice fields. The instruments would be designed to work without human attention for a year, making three daily broadcasts of meteorological conditions.

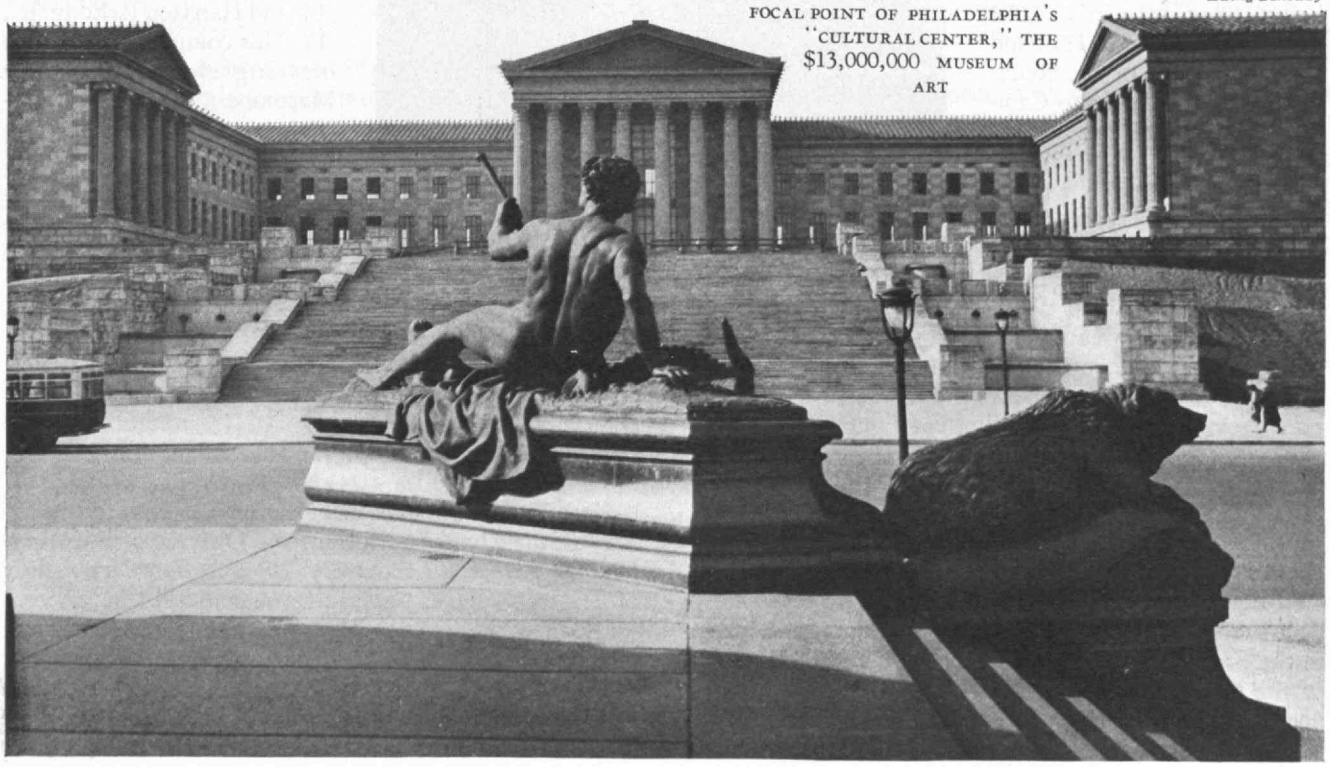
Such a proposal is an indication of the increasing recognition being given to the subject of meteorology as it affects aeronautical commerce. The United States, despite the strides made in special studies for the benefit of air travel, still lags behind Europe in certain fundamental aspects of meteorological research. Dr. Carl-Gustaf A. Rossby, who is in charge of the Course in Meteorology at the Institute, has urged the need for establishing weather stations at very close intervals across North America.

Volume of Research

EXCLUSIVE of college, university and Government laboratories or control and testing laboratories, there are now about 33,000 research workers in the United States apportioned among 1,000 laboratories. Each year their expenditures total about $210,000,000. For these figures Dr. H. W. Gillett, writing in *Industrial and Engineering Chemistry* stands sponsor. However, statistics of the amounts expended in the research activities of the nation are largely guesswork, he states, as is the estimate that less than a tenth of the workers and about a twentieth of the money goes for pure science, the rest being for applied science.

The difficulty in obtaining accurate figures is illustrated by Dr. Gillett when he says, "The dividing lines between research in pure science, industrial research, development work, plant 'trouble-shooting,' attention to customer complaints, and routine analysis and inspection are so hazy that, without a census in which all items of so-called research are clearly classified, one is at sea in guessing the extent of research."

Ewing Galloway



FOCAL POINT OF PHILADELPHIA'S "CULTURAL CENTER," THE $13,000,000 MUSEUM OF ART

THE INSTITUTE GAZETTE

Inauguration

PLANS for a brief and dignified ceremony inducting Dr. Karl Taylor Compton into the Presidency of the Institute are now being formulated by a joint committee of the Corporation, Faculty, and Alumni. The exercises will be held outdoors in Eastman Court at 3 P.M., on Friday, June 6. Delegates and members of the academic procession will be seated on a platform erected in front of the main portico, the addresses of the speakers being conveyed to all portions of the Court by means of a public address system.

Invitations to all former students will be mailed about the middle of May as the Committee on Inauguration is desirous of early acceptances to aid in the seating arrangements. Allotment of alumni seats will be in the order of receipt of acceptance.

The selection of Eastman Court makes it possible to care for all Alumni and guests who wish to attend. This number, it is indicated, will greatly exceed those who could be admitted to the inauguration of Dr. Stratton held seven years ago in Symphony Hall, for the alumni body today is nearly 3,000 larger than it was in 1923 and the coincidence of the Reunion will bring many to Cambridge who might not otherwise be present.

The first thought was to transfer the exercises to Walker Memorial in the event of rain, but the inadequate facilities caused this to be abandoned. If the weather is unfavorable, those on the platform will be shielded by a canopy, the audience witnessing the ceremony from the portico and the windows facing the Court, from which vantage points the speeches will be clearly audible because of the public address system.

The inaugural exercises will be preceded by an academic procession formed near the entrance to Eastman Court, there to await the coming of President Stratton and President-Elect Compton, who will be escorted from the President's house by the members of the senior class. Those in the academic procession, which will include members of the Corporation and Faculty as well as the invited delegates of universities and scientific societies, will wear academic dress as will the speakers and the senior class.

Following the invocation, it is planned to have five brief addresses, the total time of these speeches not to exceed forty-five minutes. First will come Dr. Stratton, followed by Dr. Compton. President John Grier Hibben of Princeton will then convey the congratulations of the university of whose faculty Dr. Compton has been a member for seventeen years. President A. Lawrence Lowell of Harvard will express the greetings of New England educational institutions and a final speaker, whose tentative acceptance has been received, will represent the scientists and educators of foreign countries.

TO BE PRESIDENT OF THE ALUMNI ASSOCIATION FOR 1930–1931: THOMAS C. DESMOND '09. HE IS ALSO CO-AUTHOR OF THE ARTICLE ON PAGE 350 AND CHAIRMAN OF THE REUNION COMMITTEE

The committee on the Inauguration, of which Walter Humphreys, '97, Secretary of the Corporation, is chairman, and Horace S. Ford, Bursar of the Institute, is secretary, consists of: *From the Corporation*—Charles T. Main, '76, Henry A. Morss, '93, Salmon W. Wilder, '91, and Maurice R. Scharff, '09; *From the Faculty*—Samuel C. Prescott, '94, Allyne L. Merrill, '85, Harold E. Lobdell, '17, William Emerson, William P. Ryan, '18, and Colonel Robert C. Eddy; *From the Alumni Association*—James W. Rollins, '78, Willard H. Watkins, '95, Donald G. Robbins, '07, Harold B. Richmond, '14, and Harrison P. Eddy, Jr., '17. This committee at its first meeting elected Alexander Macomber, '07, as Chief Marshal, and added the following to its membership: Harry W. Gardner, '94, Edward L. Bowles, S.M., '22, and John J. Rowlands.

Commencement Orator

SIR WILLIAM H. BRAGG, one of England's most distinguished scientists, and internationally known as Director of the Royal Institution of Great Britain, will be the commencement orator at the graduation exercises to be held on June 10.

Since 1923, he has been Fullerton Professor of Chemistry in the Royal Institution, and Director of the Davy-Faraday Research Laboratory. He is an honorary Fellow of Trinity College, Cambridge, and in 1915 he, in conjunction with his son, W. L. Bragg, was awarded the Nobel Prize for studies on x-rays and crystals. The honor of the Rumford Medal of the Royal Society came to him in 1916, and in the following year he and his son were awarded the Gold Medal of the *Societe Italiana della*

A Message from President-Elect Compton

Alumni and Friends of the Massachusetts Institute of Technology:

I AM HAPPY for this opportunity to respond to the welcome which you have extended to me through The Technology Review, and to tell you with what genuine pleasure I am looking forward to joining you in the work of the Institute.

In its essentials this work may be simply stated to be "the development of science and its useful applications." The program of this work involves those attempts to understand Nature which we call research, those efforts to persuade Nature to serve our purposes which we call industrial development, and, above all, the training of men who will take the lead in further extending this program. The program is of such fundamental importance to civilization as to compel the adherence and support of all thoughtful men. It is a program in which we, who belong to the more inquiring or practically-minded classes, must take the lead. I join you in this program with enthusiasm for its importance and confident of your support in every effort to make the Institute still more effective in the pursuit of knowledge and the practical applications of knowledge to life.

In carrying forward this program you will still have the leadership of Dr. Stratton, whose experience, judgment, and intimate knowledge of the problems of the Institute are invaluable. I have been happily associated with him for many years in various scientific societies. His desire to have me coöperate with him in the administration was a major consideration in my acceptance, and I am convinced that the new administrative arrangement will be personally a happy one just as I believe that it is, in principle, a wise one.

As I become more intimately acquainted with the Institute and its work and its problems, I shall at the same time become personally acquainted with you, who so splendidly represent the Institute throughout the world. Looking forward to this closer relationship, I am,

Most cordially yours,

(*signed*) KARL T. COMPTON

Scienze. In 1914, Brown University conferred upon him the honorary degree of Doctor of Science, which has also been awarded him by the University of Manchester, Leeds University, Trinity College, Dublin, University of Pennsylvania, Oxford University, and Bristol University.

New Dormitories

GROUND was broken, on March 24, for the west wing of the dormitory quadrangle. This new building, consisting of three connected units, will provide accommodations for 200 students and in its design represents great advances in college dormitory facilities.

The location of the new wing, to the west of its existing companion building, is directly behind the Walker Memorial building on that part of the Institute grounds which borders on Ames Street. The architects are Coolidge and Carlson, and construction will be carried on under the direction of Harry J. Carlson, '92, head of the firm.

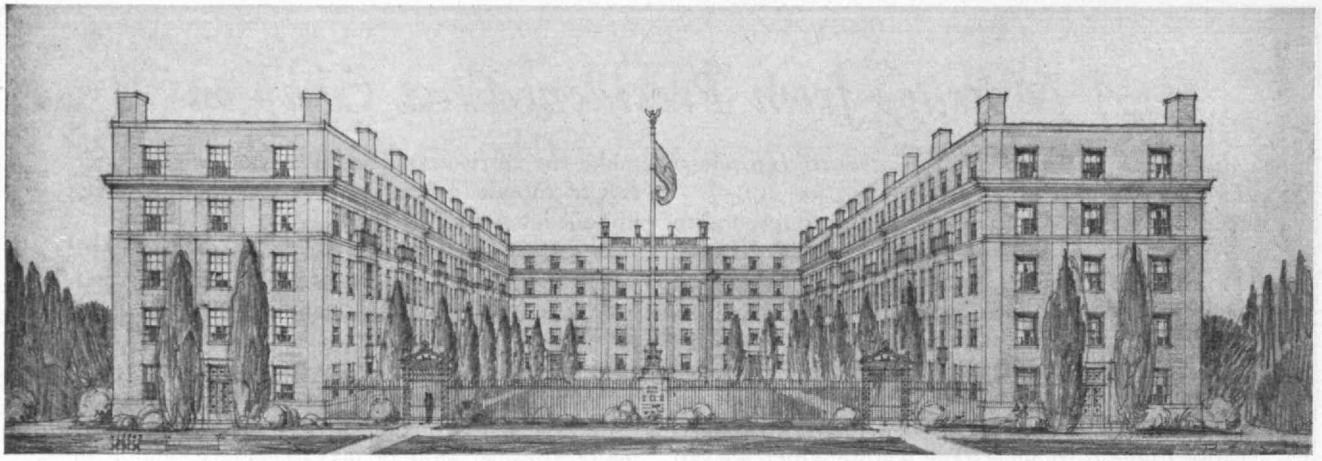
The building will be more than 300 feet long, some 40 feet wide, and five stories in height. Construction is now under way and the building will be ready for occupancy this autumn. Technology will then have dormitory accommodations for 620 of her 3,000 students. The head house, which eventually will close the north end of the quadrangle, formed by the two wings, remains to be built in the future.

One of the most interesting features of the new dormitory, which will be built of cream-colored brick with limestone trimmings, is a large commons room to be furnished after the manner of a colonial inn, with a great fireplace, appropriate wall paper of the period, and comfortable chairs and lounges. The room has been designed to permit its conversion into bedrooms or studies if such a change is necessary in the future.

The radio facilities, believed to be the first of their kind installed in any college dormitory, consist of a new system of individual outlets in every room, making it possible to employ a master antenna giving a wide selection of stations.

Plans for the new dormitories show the Grecian style characteristic of all the Technology buildings. The west façade of the central section will be broken by fluted pilasters surmounted by a latticed parapet with decorations in the Grecian urn motif. The six entrances to the new wing will be much larger than those in the existing building, and on each side of the entrances will be stone seats.

The interior of the building will be furnished in birch, painted in colors to harmonize with a decorative plan now being worked out. At the south end of the building, on the ground floor, will be offices for the administrative staff, with a post office and laundry delivery service. On the upper floors at this end of the wing will be a number of suites, each with living room and two bedrooms overlooking the Charles River Basin. An intercommunicating telephone system will connect every room through a private exchange, and there will be a number of conveniently located public telephones. Other features will include waste paper chutes leading from every floor directly to an incinerator. There will also be linen chutes and other conveniences to add to the efficiency of maintenance.



NEW DORMITORY QUADRANGLE, OF WHICH THE LEFT WING IS NOW UNDER CONSTRUCTION, THE RIGHT FINISHED, AND THE CENTER PROJECTED FOR THE FUTURE, SEE PAGE 365

Every room will be furnished with a bed, a chiffonier especially designed for men, a desk and two chairs, bookcase, waste paper basket, reading lamps, a clothes closet, and a lavatory. These features are standard in all Technology's dormitories. Students coming to the Institute need bring nothing more than is necessary in a good hotel, for the rooms are completely furnished with all linen, towels, soap, and even a special lamp for shaving. All walls are specially processed with canvas so that the occupants may place their decorations without injuring the plaster. The new building will be connected with its opposite wing by an underground tunnel to facilitate service operations, and the grounds between the buildings will be landscaped with lawns and evergreens.

Among the unique features in the construction of the new units is the use of the latest methods of floor construction. The beams will be of the type known as junior steel beams extending the full span from wall to wall and spot welded at each end to the girder beams. These beams will then be covered with a high rib metal lath upon which the floor slabs of concrete may be poured without the necessity of any forms. Another departure from the usual methods of construction is that, although the building will to all intents and purposes be one structure, it will in reality be divided into three separate units connected by mastic joints. By this method the normal settlement expected in all buildings will cause no unsightly inequalities of elevation.

145th Council Meeting

ON MARCH 24, the Alumni Council and Faculty Club held a joint meeting at Walker Memorial, an annual event to discuss problems of mutual interest. To lighten the customary routine business, the reports of the Secretary and Treasurer were dispensed with by a statement from the Chair. Under reports of committees, Allan W. Rowe, '01, recounted the progress made in studying the question of changes in the method of voting for officers of the Alumni Association and for Term Members of the Corporation. This report was thoroughgoing and far-reaching in the scope of material presented. It recommended a reorganization of the entire Alumni Association and the creation of a new electoral congress to be composed of Technology graduates residing in various sections of the country. At a later date this proposed plan will be submitted in detail to the entire alumni body for approval. This committee, to study the problem of reorganization of the Alumni Association, consisting of Dr. Rowe, chairman, Charles W. Aiken, '91, Francis J. Chesterman, '05, Bradley Dewey, '09, and Francis E. Stern, '16, by vote of the Council is to continue its work.

Reporting for the committee consisting of Isaac W. Litchfield, '85, Frank L. Locke, '86, and Thomas B. Booth, '95, to draw up resolutions on the deaths of Henry F. Bryant, '87, Walter B. Snow, '82, Edward W. Rollins, '71, and Wallace C. Brackett, '95, the Secretary, Laurence P. Geer, '15, read the following:

Henry F. Bryant: "In the death of Henry F. Bryant of the Class of 1887, Technology recognizes the loss of a worthy Alumnus, and this Association mourns a devoted member.

"Classmates, neighbors, and associates in business or in service to his fellows, will long remember him as a loyal, faithful friend and co-worker. In all his relationships, whether in social and civic or business and professional affairs, Henry F. Bryant gave time and effort without reservation, and proved true to every trust imposed upon him.

"With a fine sense of the duties of citizenship, he was active in the local interests of his home in Brookline. He was prominent in the affairs of the Unitarian Church, of which he was a member. To the Boston Society of Civil Engineers he gave loyal and earnest service, and in addition to membership on important committees he was honored by election to the offices of Vice-President and President.

"His contributions to Technology as Vice-President of the Alumni Association, as a member of the Alumni Council, as chairman of the Dormitory Fund Committee, and as a member from time to time of other special committees, were always rendered with painstaking attention and faithfulness.

"The Alumni Council of the Massachusetts Institute of Technology hereby records its appreciation of a fellow Alumnus and of his quiet, unostentatious service to his Alma Mater."

Walter C. Brackett: "To his many friends, fellow Alumni, classmates, and business associates the death of Wallace C. Brackett, '95, at New York City, on October 14, 1929, came as a profound shock and brought a sense of deep personal loss.

"With his business career divided between Boston and New York, his large and constantly growing circle of friends in both localities included innumerable Technology Alumni, to whom he endeared himself by his geniality, warm-hearted enthusiasm, and generosity, and whose great respect he universally commanded and held through his high ideals, loyalty, charming manner, and uprightness.

"A faithful member of the Alumni Council for a number of years, his ability was early recognized. As a member of the Executive Committee of the Alumni Association, All-Technology Reunion Committee of 1925, and numerous other committees, he was assigned and performed successfully many difficult tasks. To these he gave his time and services generously and without stint. To them he brought unbounded enthusiasm, keen judgment, freshness of vision, and a strikingly practical point of view.

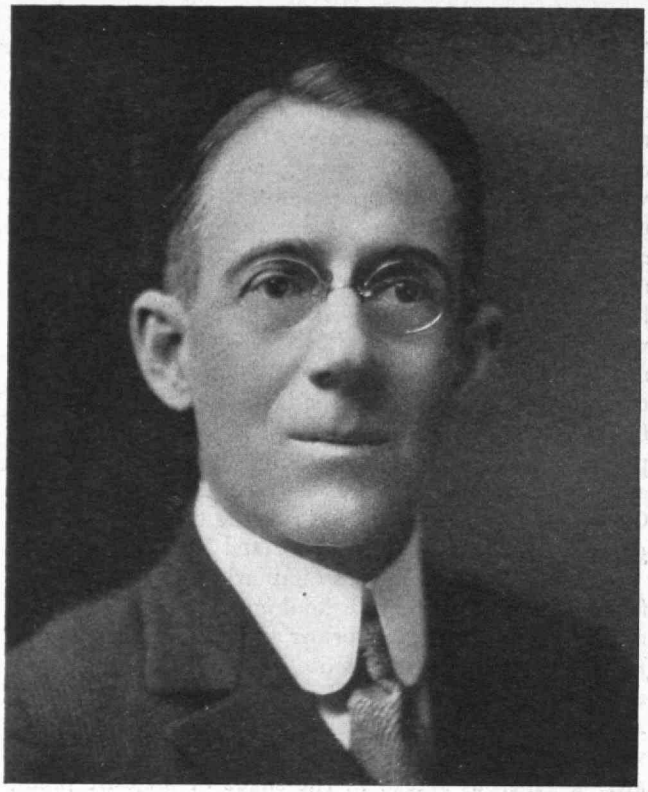
"Serving for many years as the Secretary of the Class of 1895, prominent at all times in its activities, and keenly alive to the desirability of preserving and fostering social relationships, he held the warm personal affection and will always command the grateful memory, of each of its members.

"The Alumni Council of the Massachusetts Institute of Technology takes this opportunity of expressing its deep sense of appreciation of his high personal character and the value of his devoted services to the interests of Technology."

Edward W. Rollins: "The death of Edward W. Rollins, '71, in October, removed one of the few remaining representatives of the Old Guard, members of the first four classes who worked together under the same roof when the Rogers Building was new. After graduation he became identified with the business and social life of Denver, Colo., where he was prominently connected with the development of the city and state, both in engineering and financial channels. On the death of his father he returned to New England to associate himself with the banking house of E. H. Rollins and Sons Company, of which he became the head, and took up his residence near the ancestral home at Dover, N. H. His family had taken an important part in the history of that state. His father was Senator Rollins and his two brothers, who passed on before him, were men of prominence and graduates of the Institute. One was the Hon. Frank W. Rollins, Governor of New Hampshire, and the other was Montgomery Rollins, financial author and banking analyst.

"'Dad' Rollins, as he was familiarly called, had a profound admiration for Technology and the practical accomplishments of its former students. Each year in June, for a dozen years or more, he invited to his hospitable establishment at Three Rivers Farm, the Technology Alumni of Maine, New Hampshire, and Vermont, as well as a large delegation from Massachusetts, and here, after a generous spread in the shade of majestic pines, one was privileged to listen to an unusually happy symposium of speeches from Technology officials, prominent guests from all parts of the country, and representatives of sister institutions. This annual convocation was so unusual in its democracy and good fellowship that it created an atmosphere and an inspiration all its own and was always anticipated with keen pleasure. It was far

SCENE OF THE INAUGURATION IN JUNE. EASTMAN COURT DURING THE DEDICATION EXERCISES IN 1916



ALUMNUS BENEFACTOR WHO RECENTLY DIED: CHARLES A. TRIPP, '93. SEE THE MEMOIR AT THE RIGHT

more than an afternoon's entertainment; it was a renewed pledge of faith in the Institute. Mr. Rollins was Secretary of the Class of '71; was a Term Member of the Corporation; and had long been President of the New Hampshire Association.

"His private benefactions were numerous and widespread, but it was to his home town of Dover that his sympathies were chiefly drawn. It was a very faint call for help that he failed to hear if it came from that quarter. Among his larger gifts to the town were the new hospital and the children's summer home on Parker Mountain.

"Mr. Rollins was a man of wide culture and travel. He was inherently an investigator and took a lively interest in the varied matters that came to his attention, particularly if they pertained to science or industry. His retentive mind was a reservoir of exact information, and his advice on any matter was well worth having. Above all, he had a saving sense of humor and a vast fund of interesting reminiscences which made him always a most agreeable companion."

The resolution prepared for Walter B. Snow, '82, was published in the April issue of The Review. During the reading of these resolutions the assembled group of Faculty and Alumni Council members remained standing as a tribute to these four outstanding men.

Included among the guests of the evening was Thomas C. Desmond, '09, Chairman of the 1930 All-Technology Reunion Committee, who outlined Reunion plans to make June 6 and 7 memorable days for all Technology men.

At this point in the agenda of the evening, Harold B. Richmond, '14, Vice-President of the Association and the presiding officer, turned the meeting over to Harry W. Tyler, '84, President of the Faculty Club, who introduced Edmund E. Blake, '31, chairman of an undergraduate committee of the Institute Committee to study student conditions at Walker Memorial. In a manner highly commendable to a man many years his senior, Mr. Blake presented salient facts concerning the congested conditions now existing in the present dining, lounging, recreational, and extra-curricular activity facilities of Walker Memorial. (See page 373.)

With the aid of lantern slides, Harry J. Carlson, '92, who was next introduced by Dr. Tyler, showed plans of an enlarged Walker Memorial which would eliminate the congestion pointed out by the students and would provide for the future growth of the Institute's enrollment. His plans for future building projects also included the construction of a Faculty Club House, the need for which was stressed by Professor John W. M. Bunker of the Department of Biology and Public Health.

Fifty-seven members and guests were present.

Charles A. Tripp, '93: 1870–1930

CHARLES ALBION TRIPP, '93, for many years a technical expert and official of the United States Flashless Powder Company, died at his home in Wilmington, Del., on February 11. In his passing, Technology has lost a loyal Alumnus; one whose life work exemplified the worth of her training and brought credit to his Alma Mater. His achievements, his personality, and his devotion to the Institute, as shown by the bequest which he has made, mark him as one of Technology's outstanding sons and one whose accomplishments are worthy of record as an inspiration to others.

He was born in Hudson, Mass., on November 7, 1870, and entered the Institute in 1889 as a freshman in the Class of 1893. He was graduated with the Class in Electrical Engineering. Shortly after graduation, Mr. Tripp and seven other classmates entered the employ of the Westinghouse Electric and Manufacturing Company at Pittsburgh. This was in the early days of electrical engineering and before that company's new factory was built at East Pittsburgh. Of this '93 group, including, besides Tripp, Charles V. Allen, Frederick W. Hadley, George T. Hanchett, Harry N. Latey, Herbert Lewis, Heiichiro Maki, and Percy H. Thomas, only Allen still remains with the company. Tripp spent three years with Westinghouse: six months in the shops; a year and a half in the engineering office on motor design; and a year on installation of street railway equipment. In recalling him during this period, Mr. Allen writes, "While with Westinghouse, Tripp made some most valuable suggestions bearing on and resulting in patents." This is the first evidence we have of the inventive bent which was developed in him to a marked degree in later life. Concerning Tripp during these early years at Pittsburgh, Thomas says, "He was practical minded and energetic as well as having plenty of originality and initiative — almost a genius in his way. He was fond of out-of-doors and knew most of the walks and woods around Pittsburgh and Allegheny."

Leaving the Westinghouse Company in 1896, Tripp served for two years as manager of the Municipal Light and Power Plant of his native town, Hudson, Mass. During this time he built the first unit of the present

station, a unit which is still functioning as he built it. He resigned his position at Hudson in 1898 to become associated with A. Farwell Bemis, '93, in the work of the Bemis Bro. Bag Company.

Tripp's employment as engineer by the Bemis Bro. Bag Company, extending for five years between 1898 and 1903, marked an important change in that company's managerial and research policy. It was the first step toward unified engineering control of plant and mechanical operation. He had a very difficult position to fill in the resulting personnel problems in addition to a maze of physical or mechanical problems. Throughout he handled the work with tact and with the pronounced ingenious mechanical ability which his entire record has evidenced.

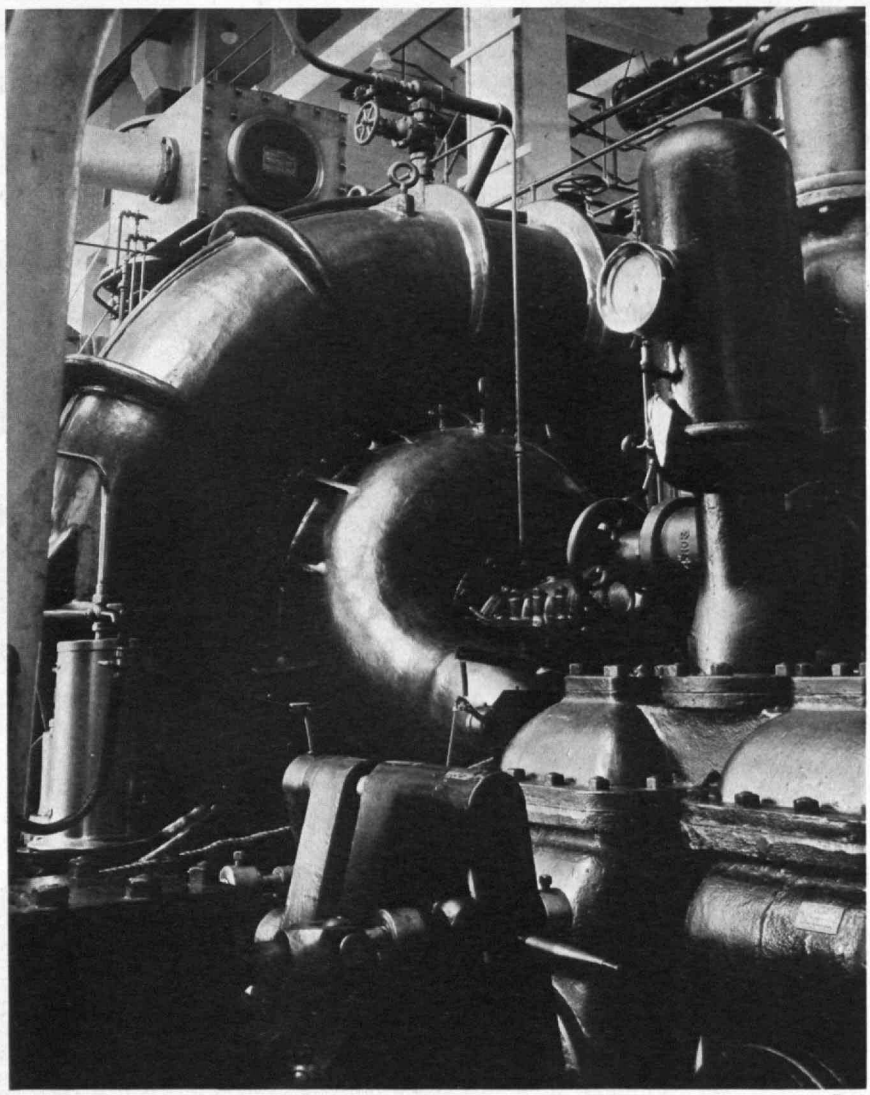
Along with the large number of miscellaneous minor accomplishments during this term of service, Tripp carried through to successful termination a study of methods of cutting, printing, and folding cloth from the web, resulting in patented machinery for performing these operations. Whereas the patent obtained on the process and machinery was not "basic" in its character, nevertheless the claims proved sound and the devices practically effective and the process is still largely used by the company in the design of its machinery and its manufacture and methods.

In 1900 the plant of the Bemis Bro. Bag Company at Jackson, Tenn., was under construction, and on this work Tripp had as his assistant, George R. Wadleigh, '97, who has written interestingly of their work together at Jackson. He writes, "We boarded in different houses with two old Southern families, and used to drive out to work over some four miles of muddy road in the morning, and get back to the house by seven in the evening. Under these circumstances we got to know each other very well indeed." Tripp was extremely conscientious, and contrary to Southern custom, always insisted upon punctuality and faithful attention to work. As evidence of Tripp's fertile ingenuity, Wadleigh says: "The boilers for this plant were the Cahall vertical water-tube. The water level was some thirty feet above the ground, and it was very difficult to read the water gauge. We decided that a gauge could be worked out that could be read from the floor readily. Through the use of an inclined mercury column we devised such a gauge, patented it, and sold a few. This was a year or two later after the mill was in operation.

"After the construction of the Tennessee mill was completed, Tripp used to visit there once or twice a year, and after he left the Bemis company and was living in Indianapolis I would always visit him on the occasion of my trips to that city at his home on Woodruff Place. He was a very early owner of an automobile. I don't know that he ever had a 'one-lunger,' but I think he had a two cylinder machine. He certainly got a lot more pleasure out of taking it apart than he ever did in running it."

While with the Bemis Bro. Bag Company, Tripp made his headquarters mainly at Indianapolis. There he became quite intimately acquainted with a young engineer named McMeans. As a result of this acquaintance, certain very promising opportunities opened for him in association with McMeans. He decided to leave the Bemis Bro. Bag Company, and in 1903 established the firm of McMeans and Tripp, consulting and mechanical engineers, in which new relationship he continued his inventive mechanical accomplishment thus well started with the Bemis Bro. Bag Company.

Very soon after the new firm of McMeans and Tripp had opened its office, an opportunity came to develop a series of new machines for use in canning factories. The large canning plant owned and operated by the originator of these machines burned to the (*Continued on page 408*)



Davis

GREAT CENTRIFUGAL PUMP IN THE INSTITUTE'S LABORATORY OF STEAM AND HYDRAULIC ENGINEERING. THIS LABORATORY AND ALL OTHERS WILL BE OPEN FOR INSPECTION ON JUNE 6

THE REUNION BULLETIN

Reunion Plans in Review

THE happy circumstances which make it possible to hold the inauguration of Dr. Karl T. Compton as President of Technology on Friday, June 6, the opening day of the All-Technology Reunion, will not only give everyone an opportunity to witness the impressive and colorful ceremony of that important event, but also to meet the Institute's new President. (See Page 364.)

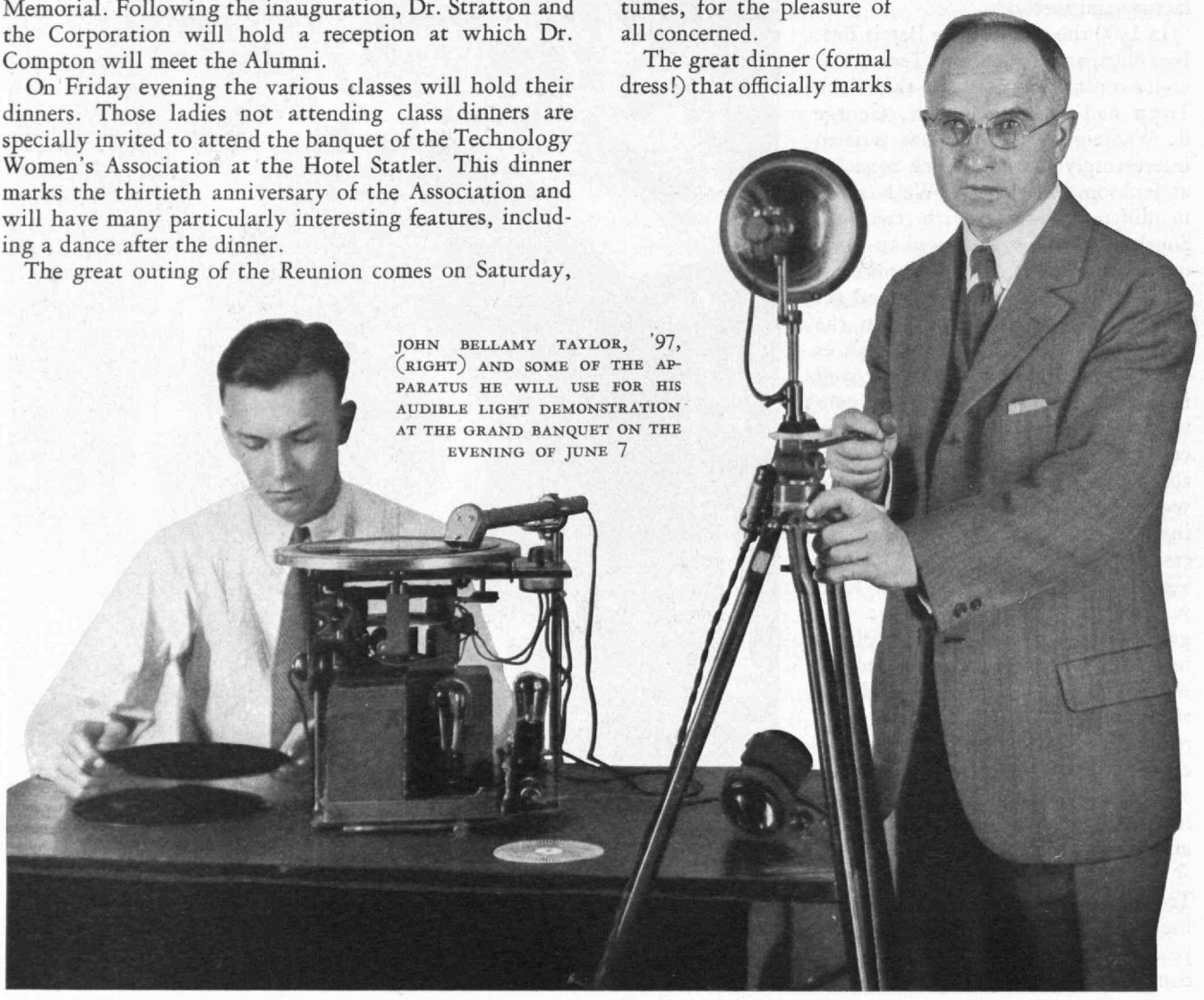
Before the inauguration, which will be held in mid-afternoon, the Alumni will have an opportunity to inspect the buildings and laboratories of the Institute which will be given over in its entirety to a scientific exposition specially arranged for the pleasure of those who come back to renew old friendships and to witness the progress of Technology since their student days. At 12:30 P.M. there will be luncheons at Fraternity Houses (See Page 371) and a general luncheon at Walker Memorial. Following the inauguration, Dr. Stratton and the Corporation will hold a reception at which Dr. Compton will meet the Alumni.

On Friday evening the various classes will hold their dinners. Those ladies not attending class dinners are specially invited to attend the banquet of the Technology Women's Association at the Hotel Statler. This dinner marks the thirtieth anniversary of the Association and will have many particularly interesting features, including a dance after the dinner.

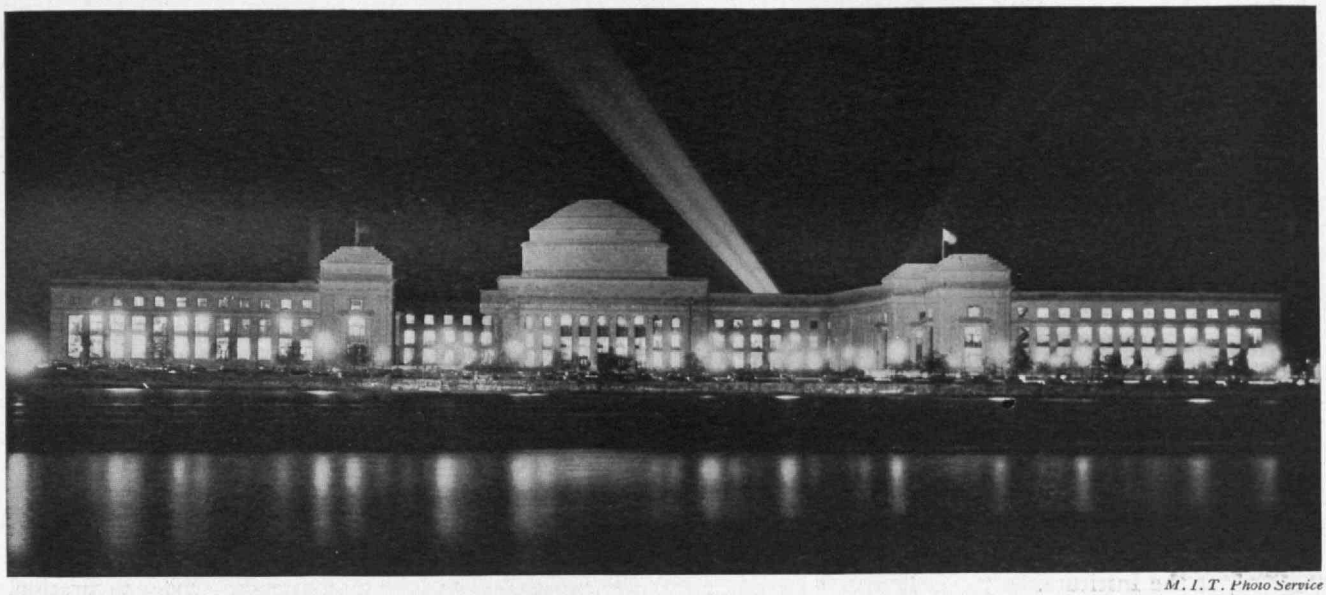
The great outing of the Reunion comes on Saturday, June 7, at the New Ocean House at Swampscott, Mass., on that delightful bit of New England's picturesque coast to which Calvin Coolidge came to seek of rest and recreation during his administration in the White House. Here, with all the comforts of one of the largest and most modern summer hotels, with surf bathing on a wide sandy beach, will be found a most fitting spot for a day of sports, contests, and good fellowship. The cold, clear North Atlantic will undoubtedly make generous contributions of its most toothsome products for the luncheon by the sea. Aside from this purely gastronomic feature, there will be events, including a bridge tournament for the ladies, to meet every desire for good fun and recreation. As explained below, special busses will take everyone to and from the outing on a convenient schedule arranged particularly to meet the demands of the day.

Class costumes are encouraged. In fact, it is urged that every class make a special effort to present its members, long, lean, short or stout, in colorful and original costumes, for the pleasure of all concerned.

The great dinner (formal dress!) that officially marks



JOHN BELLAMY TAYLOR, '97, (RIGHT) AND SOME OF THE APPARATUS HE WILL USE FOR HIS AUDIBLE LIGHT DEMONSTRATION AT THE GRAND BANQUET ON THE EVENING OF JUNE 7



M. I. T. Photo Service

THE INSTITUTE IN EVENING DRESS. THE ENTIRE CAMBRIDGE PLANT WILL BE ILLUMINATED FOR ALUMNI ON THE EVENING OF JUNE 6

the close of the Reunion will be given in the Hotel Statler on Saturday evening following the return of the Alumni from Swampscott. Dr. Stratton and Dr. Compton will make addresses, and there will be an unusual scientific demonstration of "audible light," a spectacular and interesting experiment in "narrowcasting" which will be carried out by John Bellamy Taylor, '97.

The blanket ticket covering all these events, including the outing and the great banquet, will cost but $10.00 and separate tickets for the outing or the banquet are obtainable at $5.00 each. All inquiries about the Reunion should be addressed to Headquarters, Room 3-207, M. I. T; applications for tickets to Room 3–106.

Boat Trip and Reduced Railroad Fares

AS announced in the last *Reunion Bulletin* convention fares on the certificate plan are expected to apply to those attending the Reunion. Through such a privilege, if sufficient certificates are secured, the return trip by the same route would be secured for half-fare by all persons who purchase a certificate. *It is important, therefore, that every person attending the Reunion secure from his local railroad agent a certificate at the time he purchases his transportation.* In this manner the privilege of the special rate of half-fare for the return trip can be secured. Local railroad agents are receiving advance notice of the reduced fares about May 1.

The complete train schedules and routes of those attending the Reunion was published in the March *Reunion Bulletin*. References to these carefully worked out official routings will simplify the making of plans for reaching Boston.

Alumni expecting to travel by boat from New York to Boston on the night of June 5 should make their reservations immediately with Robert J. Marlow, Room 3211, 120 Broadway, New York City. The entire accommodations of the S. S. *New York* of the Eastern Steamship Lines have been reserved and a special program of entertainment has been planned. The boat leaves Pier 19, North River, at 5 P.M. Daylight Saving Time.

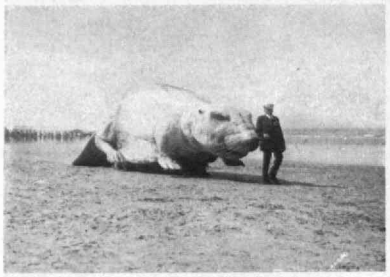
All of the schedules arranged by the Transportation Committee converge in New York in time to permit catching this boat.

Fraternity Luncheons

HAMILTON L. WOOD, '17, in charge of Fraternity Luncheons, planned for 12:30 P.M., Friday, reports the following chapters as having definitely arranged for luncheons: Alpha Tau Omega, 37 Bay State Road, Boston; Beta Theta Pi, 241 Kent Street, Bookline; Chi Phi, 44 The Fenway, Boston; Delta Kappa Epsilon, 403 Memorial Drive, Cambridge; Delta Tau Delta, 255 St. Paul Street, Brookline; Delta Upsilon, 526 Beacon Street, Boston; Lambda Chi Alpha, 441 Beacon Street, Boston; Phi Beta Epsilon, 400 Memorial Drive, Cambridge; Phi Gamma Delta, 28 The Fenway, Boston; Phi Kappa Sigma, 530 Beacon Street, Boston; Sigma Alpha Mu, 338 Bay State Road, Boston; Sigma Chi, 532 Beacon Street, Boston; Sigma Nu, 259 St. Paul Street, Brookline; Theta Chi, 528 Beacon Street, Boston; Theta Xi, 66 Bay State Road, Boston. Ladies are invited to all of these luncheons.

Information About Class Dinners

OF the many class dinners planned for Friday evening, definite information about the location of the following is available: classes from 1868 to 1880, inclusive, (except 1873) Joint Dinner — in charge of J. W. Rollins, '78, Algonquin Club; 1873, Hotel Bellevue; 1881, University Club; 1884, University Club; 1887, University Club; 1889, Union Club; 1892, Boston City Club; 1893, Eastern Yacht Club, Marblehead; 1894, Hotel Kenmore; 1896, Copley Square Hotel; 1898, Grill Room, Walker Memorial; 1899, Walker Memorial; 1901, St. Botolph Club; 1902, University Club; 1904, Brae Burn Country Club; 1905, Hotel Sheraton; 1906, Winchester Country Club; 1907, Charles River Country Club; 1909, The Sheraton; 1908, Belmont Springs Country Club; 1910, American House; 1911, University Club; 1912, Brae Burn



THE BEAVER AS IT APPEARED AT THE 1916 REUNION

Country Club; 1913, Parker House; 1914, Engineers Club; 1915 and 1917, Corinthian Yacht Club, Marblehead; 1916, Hotel Statler; 1918, Engineers Club; 1923, University Club; 1926, Engineers Club; 1928, University Club. Practically every class, it is expected, will hold a get-together, and members of classes not listed above are urged to get in touch with their Class Secretaries in order to obtain information. Course members will have the opportunity to meet together during the course assemblies Friday morning at the Institute.

Hotels and Transportation

TO assure all Alumni returning to Boston on June 6 and 7 adequate hotel accommodations, the Committee on Hotels and Housing has selected the Brunswick, Copley-Plaza, Lenox, Statler, and the New Ocean House as the Hotels which will render Technology men the best service.

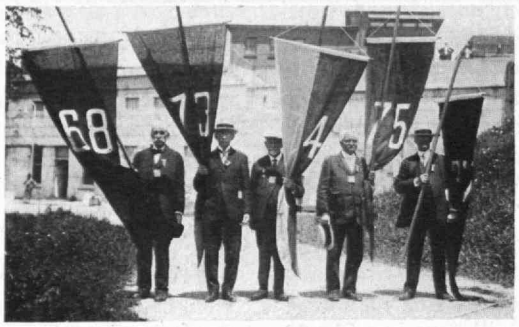
Rates are as follows — HOTEL BRUNSWICK: Single with bath, $3.50, $4.00, $4.50, $5.00; Twin beds, with bath, $6.00, $7.00, $8.00. COPLEY-PLAZA: Single with bath, $4.00, $4.50, $5.00, $6.00; Twin beds, with bath, $7.50, $8.00, $9.00, $10.00, $11.00, $12.00. LENOX: Single with bath, $3.50, $6.00; Double with bath, $5.00, $8.00. STATLER: Single with bath, $4.00, $4.50, $5.00, $6.00; Double with bath, $6.50, $7.00, $8.00, $8.50, $9.00.

Although these four hotels have signified their intention of giving Technology men preferences on reservations around June 6 and 7, the Committee urges that reservations be made early.

Guest privileges at the University Club have been extended to Technology men who will attend the Reunion. Accommodations are limited. All inquiries should be sent to the Club Manager.

Alumni desirous of hotel accommodations outside of the city limits will find the New Ocean House at Swampscott a delightful place. The rates per person, based on the American Plan, are as follows: Single room with bath (limited number) $10.00 per day; Double room with bath $8.00 and $9.00 per day; Rooms with 3 beds and bath $7.00 per day.

Promptly at nine o'clock on the morning of Saturday, June 7, Boston and Maine Railroad busses will drive up to the doors of the official hotels and take on passengers for the outing at the New Ocean House, Swampscott. These busses will move on railroad schedule and there will be no waiting or delay. They will all proceed to the New Ocean House, together with police escort. When the busses leave the New Ocean House, they will be labeled for the various hotels so that the attendants will be able to ride directly to their stopping place.



AT THE 1925 REUNION: STANDARD BEARERS FOR 1868, 1873, 1874, 1875, AND 1876. ROBERT H. RICHARDS, '68, HERE SHOWN, WILL CONDUCT THE ARCHERY CONTEST AT SWAMPSCOTT. HE ANNOUNCES THAT THREE ARCHERY PRIZES WILL BE GIVEN: ONE TO THE WOMAN WITH THE BEST RECORD, ONE TO THE MAN, AND ONE TO A GROUP. THOSE WHO EXPECT TO SHOOT ARE ADVISED TO BRING GLOVES, PREFERABLY BUCKSKIN

Wives are Invited!

THE Reunion Committee strongly feels that the success of the Reunion largely depends upon a number of wives of Technology Alumni being present. Every effort is being made to make the Reunion even more entertaining for them than for their husbands. Gretchen A. Palmer, '18, who has charge of this portion of the program has outlined for the *Bulletin* special features that will appeal to women.

After spending Friday with the husbands, visiting the scientific exposition at the Institute, attending the inauguration, and then the reception at the President's house, the wives will then have something of a vacation. While the men are attending their class dinners, all the wives will convene at the Hotel Statler at 6:45 for a dinner given under the auspices of the M. I. T. Women's Association. There will be a program of professional entertainment, and the sponsorship of the Women's Association will insure a cordiality of the highest order.

By 10:00 P.M., the class dinners will be over and the husbands are expected to come to the Statler for a dance.

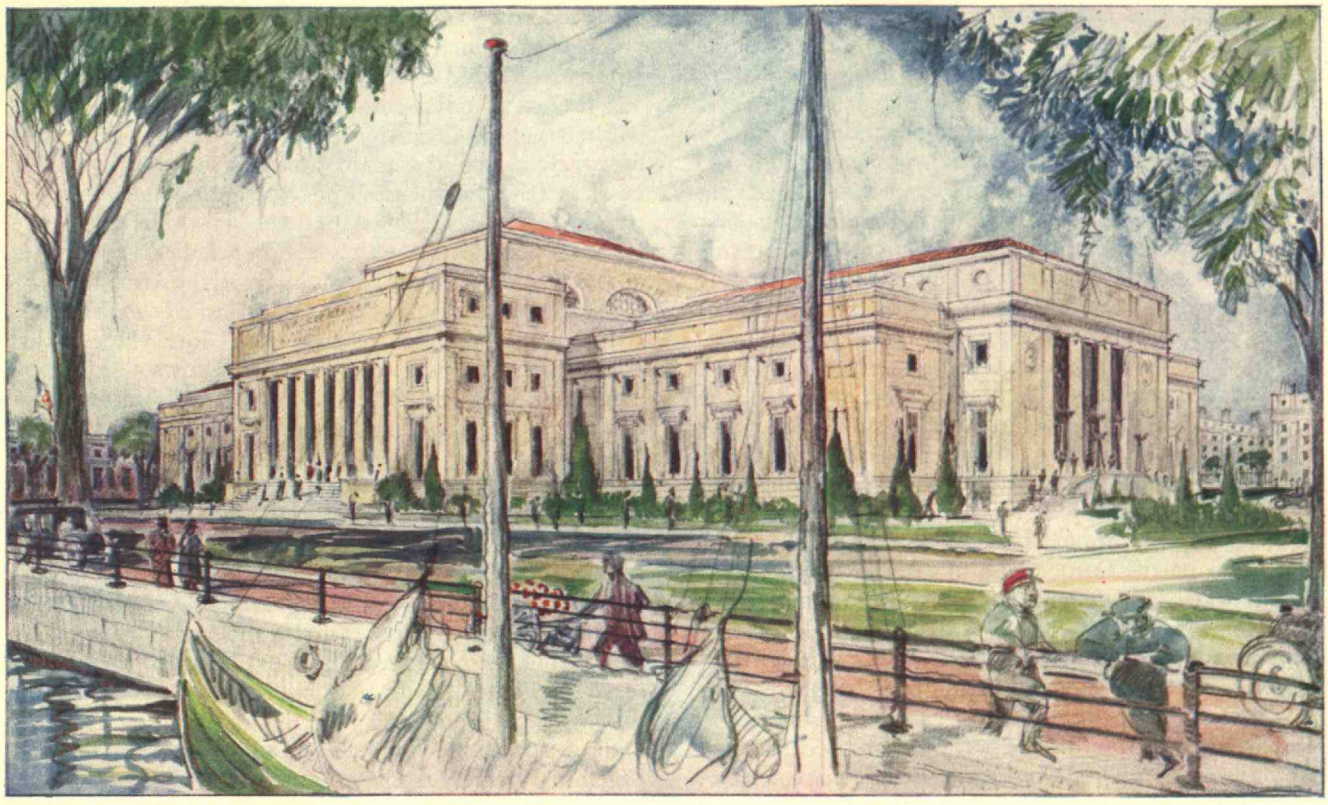
It happens that this same date coincides with the thirtieth birthday of the M. I. T. Women's Association, and so it is expected that it will be doubly a gala occasion. Maybe there will be a birthday cake!

Saturday is just as much a day for the ladies as it is for the men. They can enter all the sports they wish during the outing, and in addition to that a bridge party will be held on the porches of the hotel. There will be a prize at each table. Of course women will be an essential part of the grand banquet Saturday night.

Prizes and Features

THE Committee on Prizes and Features of which Edward B. Rowe, '06, is Chairman, reports that (*Concluded on page 412*)

GEORGE L. GILMORE, '90, TREASURER OF THE FORTHCOMING REUNION, AS HE APPEARED IN 1925



AN ADEQUATE STUDENT UNION

The Limitations of Walker Memorial and Plans for Its Enlargement

From a Report Prepared by a Committee of Undergraduates

Composed of Wilfred F. Howard, '30; D. Tullis Houston, '30; E. Ralph Rowzee, '30; and Edmund G. Blake, '31, Chairman

FOREWORD

By Allan W. Rowe, '01

THE following report is a plea for changes in the Walker Memorial which will allow the building more nearly to realize the purposes for which it was designed. With the shy hesitancy that characterizes undergraduate psychology of today, the really parlous state of affairs is but dimly portrayed. The gymnasium at the top of the building, for example, houses during a single hectic hour a squad of young men under the genial guidance of Mr. McCarthy, indulging in that occult diversion known as corrective gymnastics. On the same floor and at times hopelessly interwoven with the gymnastic squad, the fencing team is attempting to develop that skill which allows them to kill an opponent expeditiously and in perfect form. The air above is filled with the flying arms and legs — to say nothing of the occasional solid bodies — of the competitive gymnastic squad, a very different group from that whose work is corrective.

Medicine balls hurtle through the air at times, caroming from the lissome form of the flying ring specialist, at times impaling itself on an active foil, and at yet others coming in violent contact with the more tender portions of human anatomy unduly obtruded by the exigencies of gymnastic exercise. Small groups of freshmen with shouts of boyish glee add a pleasing juvenile note to the picture as they think they play basketball. Our wrestlers and boxers, it is true, have been removed but there remains enough of a remnant of the various activities to produce lifelike replicas of the Laocoön, a veiled recognition of one proviso of the Cilley bequest. And all of this is but one restricted area. In the rooms of the publications the literary aspirants stand — and lie — thicker than the leaves in Vallombrosa, and the performance of minor acts of personal hygiene by the individual can be encompassed only by synchronized movement of the entire group. Even that pampered child of fortune, the Christian Association, through force of contact has developed belief that it, too, is crowded.

All of these and many other pertinent facts being true, it behooves the interested Alumnus, concerned with the welfare of the undergraduate, to pause, to listen, and to look. There will be no need to paint the lily.

THE original plan for a memorial to General Francis A. Walker contemplated the erection of a gymnasium which should bear his name. Funds were solicited for this purpose, the completing subscription being made by the Class of 1901 on the day of its gradua-

tion. Even at this time, however, it was obvious that Technology must seek a new site in the not far distant future and so no attempt was made to realize the Walker Memorial until this question was settled. In the years that intervened the sponsors of the plan and conservators of the fund became convinced that a student club house or activity center would serve better the underlying desire of a memorial than would the gymnasium first proposed. The consent of the original donors for this change was sought and received and plans for a Walker Memorial which should house the various student activities gradually began to take form.

At the time that the building came to erection in 1916, following the transfer of Technology to Cambridge, the Corporation found themselves faced with the necessity of housing certain definite services to the student body, and under the conditions then existing were constrained to modify the original plans so that the Walker Memorial might provide for all of them. In spite of a generous contribution from the Corporation to supplement the original fund, the resulting building at the time of its opening offered but limited facilities for the various student activities for the housing of which it was primarily intended. With the steady and normal growth of the various student enterprises, the overcrowding which was existent when the building first was opened became more and more apparent. As a result, in 1923, a committee of students and Alumni appointed severally from the two bodies, conducted an exhaustive study of the entire situation and ultimately rendered a report calling for a number of drastic changes in the arrangement of the building and allocation of the space therein. The general plan as submitted both to the Alumni and to the student body was approved and informally placed before the Corporation. For reasons which need not be entered into here, this latter body found itself unable to carry out the recommendations as indicated at that time, and definite action was postponed. Conditions, however, have become progressively worse and again this year student sentiment has awakened to the need of remodelling and re-apportioning Walker Memorial, and the sub-committee of the Institute Committee, which has prepared this study, has addressed a report to its parent body, to the Alumni Council, and now to the Alumni and students of the Institute.

The whole problem resolves itself into three major heads which can be briefly stated as follows:

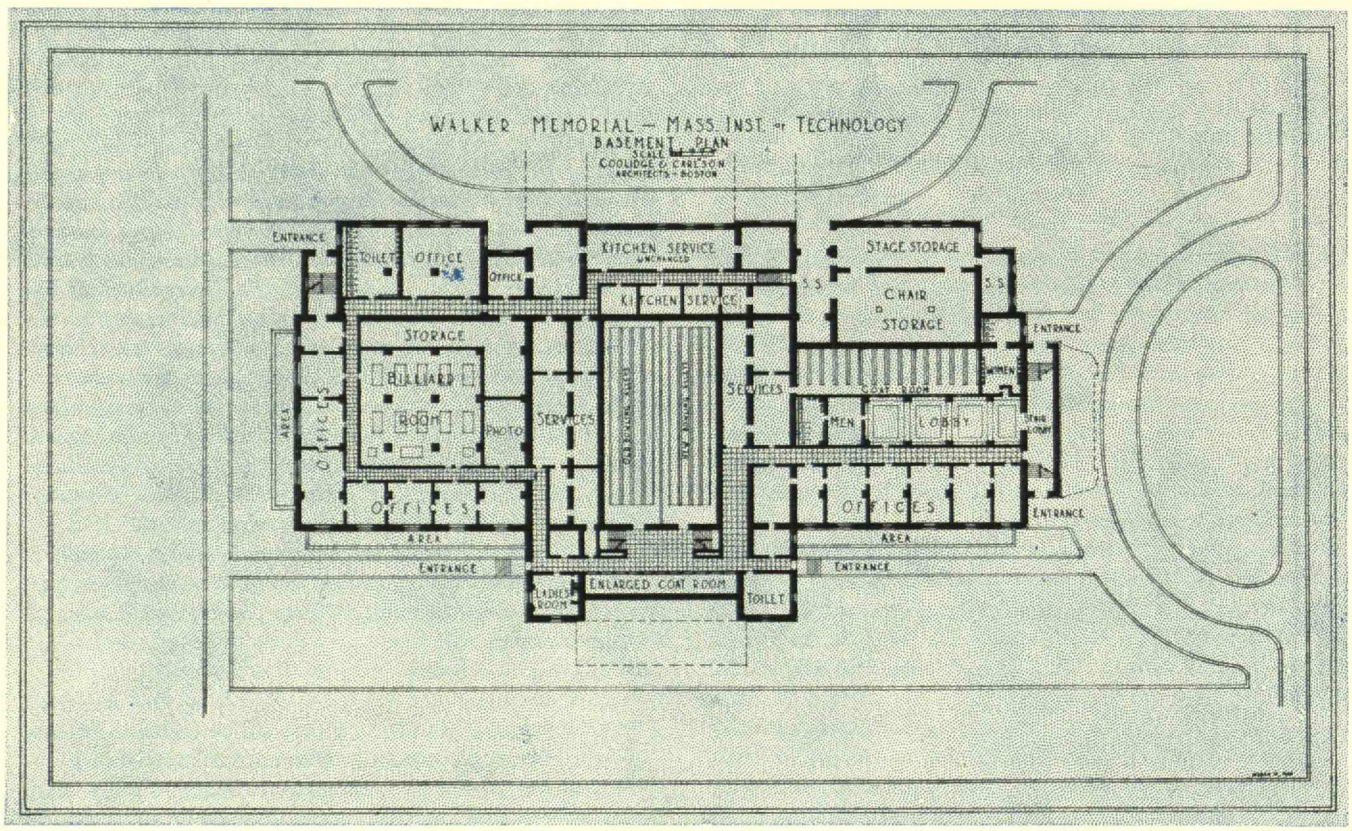
First, the removal of the dining service from the main hall and the refurnishing of that room as a general lounge.

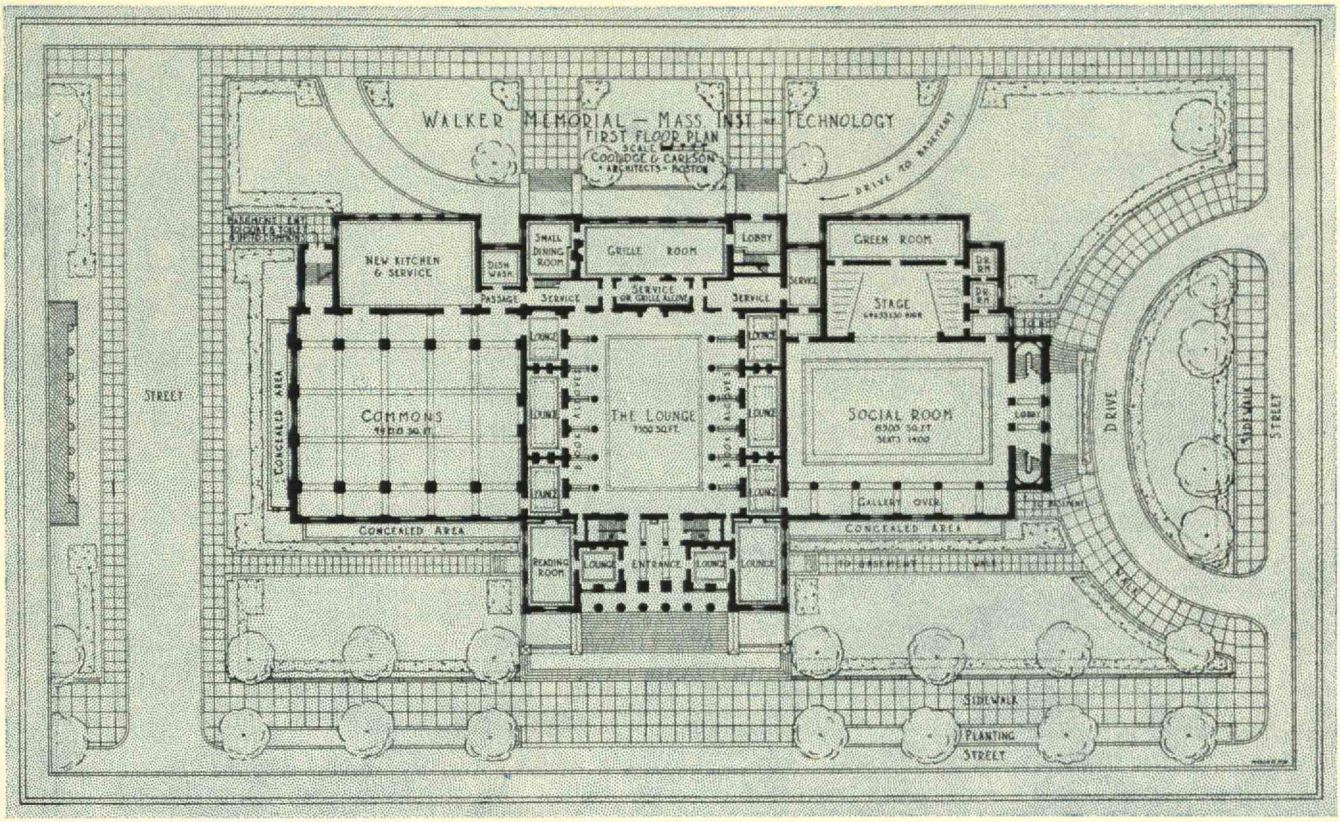
Second, the provision of a suitable auditorium for gatherings of Faculty, Alumni, and student bodies.

Third, the enlargement of the present accommodations for the various student activities.

The Main Hall — This room was designed for a lounge but it constitutes the only quarters available for a commons room, a banquet hall, and a ball room, purposes all of which it serves but indifferently. The dining service which operates a cafeteria in the hall with a seating capacity of 650, and in addition the Faculty Dining Room, the Grill Room and North Hall which together provide for some 400 more, is very badly cramped. The number of meals served daily is about 2200, and in addition to the regular service some 15,000 extra meals are provided during the year for organizations and clubs connected with Technology.

While the cafeteria will take care of 20 per minute, long "bread lines" form during the rush hours at lunch.





The kitchen, small and inefficient, is entirely inadequate for the demands made upon it. Not only is it not sound-proof, but odors often penetrate the Main Hall.

Present demands on the dining service overcrowd it, and there is no room for expansion. The minimum needs as estimated by the management are: a commons room which would accommodate 1000 people, faculty dining room and grill rooms twice the size of those now in use, a private dining room for conferences, a hall similar to North Hall to provide for 250 to 300 people, adequate kitchen facilities and a checking service to care for a capacity crowd.

The present student lounges in the Walker Memorial accommodate less than 3% of the enrollment. Further, this very limited space is seldom available, as a usual happening is for one or more of these to be cleared for the purpose of a committee meeting for which no other space is available. The committee of 1923, whose findings are presented in the thesis of Forrest G. Harmon, '23, stated that at that time students were evicted from the lounges on an average of 15 times a week.

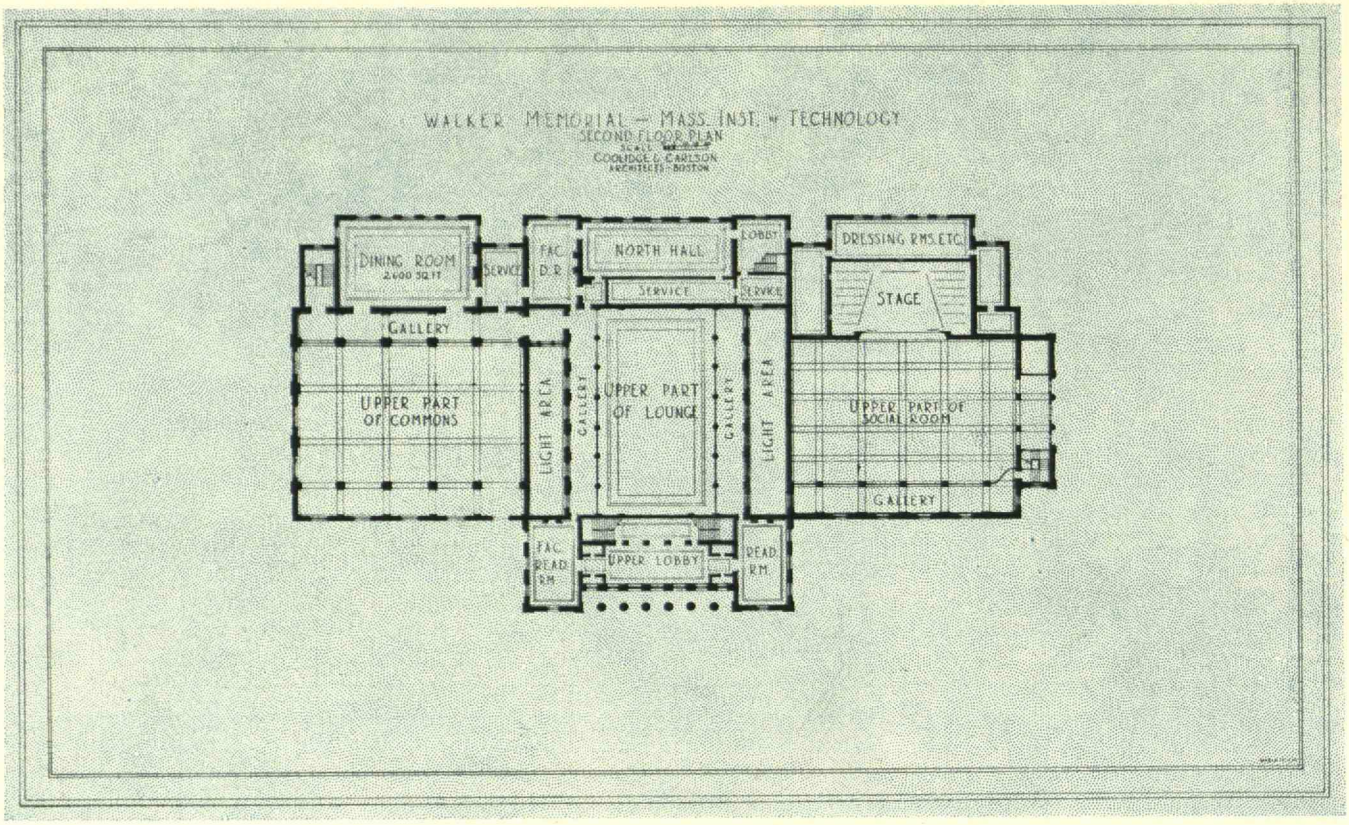
Another serious shortcoming in the present arrangement is a lack of adequate provision for the rapidly growing library made possible by funds from the Cilley bequest.

An Auditorium — At the present time Technology has no space at all adequate for housing lectures, assemblies, and other social gatherings for students, Faculty, and Alumni. While the educational building has certain large rooms for teaching they are but ill-adapted to any but conventional teaching needs. The Main Hall has been used for large banquets but with the inadequacy of the kitchen service it is not satisfactory for this purpose. Last fall the student body started a campaign with "Use Walker" as the slogan, thus signifying their wish that their own social affairs should be held in Institute property rather than in clubs and hotels in Boston. The response to this campaign has brought to the front the drawbacks of the terrazzo floor, undecorative furnishings, crowded checking space, and inefficient service of food.

At the present time the Drama Shop is conducting dramatic entertainments in the Commons Room of the Rogers Building where the seating capacity is about 100 and the stage no more than a recess with a width of 12 feet and no passage from side to side during a performance.

Under present conditions no large dinner meetings of students or Alumni are possible; the annual All-Technology smoker overtaxes the present facilities; a large alumni dinner could neither be seated nor served; there is no auditorium available other than the bare lecture room now used by the Physics Department for distinguished speakers or artists who might come to Technology. And the capacity here is less than 700 or a scant quarter of the student body.

Student Activities — The third large question in the general problem is concerned with the provision for the student activities which was the primary consideration of the committees in 1923. The situation in these offices reflects vividly the general overcrowding of the building. In some of the activities the allotment of space allows but three square feet per person were they all to assemble at once time, and as the cross section of the average standing man approaches two square feet and may exceed it, the inadequacy of the present accommodations to meet the current needs requires no elaboration.



The figures given above take into consideration only those activities which enjoy office space and include the four publications (*The Tech*, *Technique*, *VooDoo*, *and T. E. N.*), the Athletic Association, Tech Show, Musical Clubs, and the Christian Association. The Institute Committee, the Student Governing Body, and the committees for the Walker Memorial and Point System share jointly a magnificent apartment eleven by thirteen feet. No space whatever is provided for the 10 professional societies, the 10 clubs, and the 20 honorary societies.

The space available for all of the student activities is now about 3000 square feet. The individual offices are far too small for the daily work and any special meeting leads to a commandeering of one of the lounges, thus aggravating the congestion in the remainder unless they too have been commandeered. A conservative estimate of the needs of the present activities, with reasonable allowance for future expansion, indicates an area of some 12,000 square feet of four times the present allowance.

The Complete Solution — It is apparent that the plans, published herewith and prepared for the committee by Harry J. Carlson, '92, answer in every detail the needs as they have been stated. Not only will they provide a utilitarian structure but also one emphasizing architectural beauty throughout. Wings will be added on each side of the present building, with a beautiful entrance to the auditorium from Amherst Street.

The first floor plan (page 375) shows the proposed disposition of the dining service which now absorbs the Main Hall. A huge room of 14,000 square feet will occupy a large share of the West Wing, and behind it are kitchens of adequate size. Private dining rooms have been introduced; a grill occupies the present kitchen space; and North Hall and the Faculty Dining Rooms are left untouched and will function as at present.

With the Main Hall thus relieved of the dining service, it will be furnished as a lounge. "Conversational groupings" of furniture will cover the main floor, while the space under the balconies will be arranged as alcoves defined by bookshelves extending from the walls to the pillars and containing the books of the library. Each alcove will be furnished with comfortable chairs, reading lamps and tables, with possibly fireplaces to add the final touch to the congenial atmosphere.

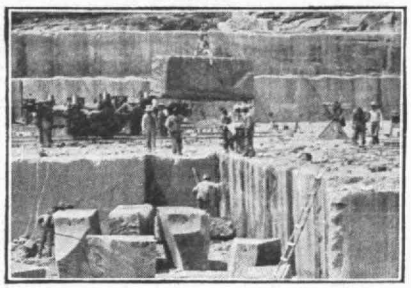
As is shown in the basement plan (page 374), the activities have been amply provided with offices, each group being allotted adequate space. These rooms will have full length windows giving onto a concealed areaway, dispelling the gloom that now prevails in the present basement quarters. The rest of the basement will be given over to toilet facilities and checking rooms for men and women, and to needed enlargements of the game rooms.

The East Wing is the architectural masterpiece, an auditorium of which all Technology men will be proud. Like the Commons Room in the opposite wing, this room will be two stories high. With a stage 50 feet high, 64 feet wide, and 35 feet deep, and a seating capacity of 1400, the auditorium will take care of any group that is likely to come to Technology. Tech Show will find the auditorium the solution for its present problem, as well as an incentive for the highest type of production, for the wing is ideally equipped for dramatics. Beautifully appointed, this spacious assembly room may easily be transformed into a ball room comparable to that of any hotel, and with a direct connection to the lounge.

Irving Trust Company Building, being erected at One Wall Street, corner of Broadway, New York City. Voorhees, Gmelin & Walker, Architects. Marc Eidlitz & Son, Builders.

BANKERS

know the earning power of Stone



"Dark Hollow" — one of the many famous quarries owned by Indiana Limestone Company

THE location of the new building of the Irving Trust Company is one of the most valuable pieces of real estate in the world. The selection of Indiana Limestone for this 50-story structure is evidence anew that modern business is convinced of the greater *earning* power of natural stone.

The public has indicated unmistakably that it likes these light-gray towers of Indiana Limestone. Surveys in leading cities show that in percentage of space rented, limestone structures rank well above the general average. Where land values are high, this demonstrated greater earning power of stone is of first importance.

Besides the beauty of the stone and the resulting popularity of the building faced with it, there are other factors which explain the amazing swing to Indiana Limestone in recent years. One is the speed of construction possible. Another is the fact that in after years, the stone exterior requires no costly cleaning. The soft color-tones of Indiana Limestone become more attractive with age.

Most of the Indiana Limestone used today comes from the quarries of Indiana Limestone Company. Formed in 1926, this company is a consolidation of 24 properties. Assets exceed $46,000.000. Facilities are adequate to handle any number of large contract operations.

Whatever your interest in building, write for an illustrated brochure telling about Indiana Limestone and its use in modern architecture. Or we have a special booklet showing residences. Address Box 826, Service Bureau, Bedford, Ind.

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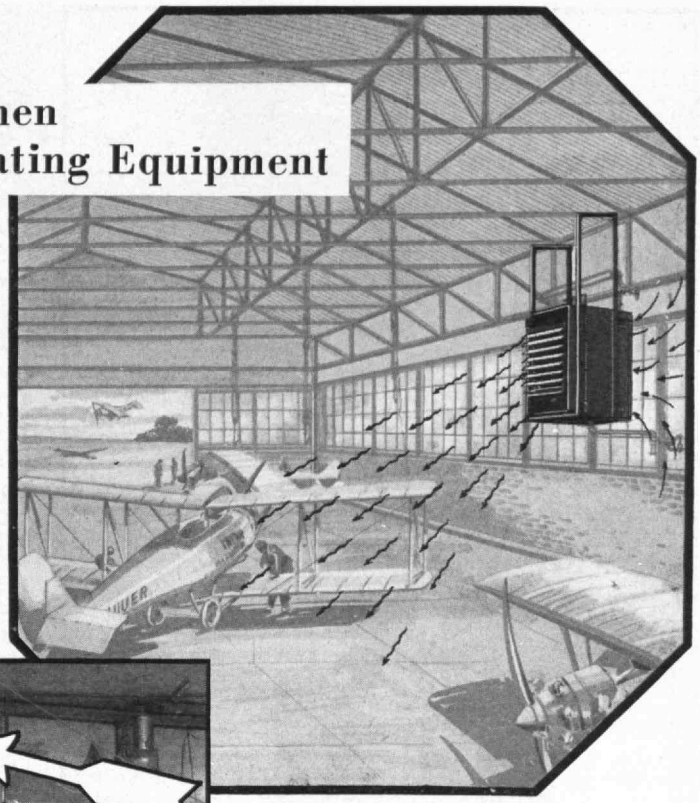
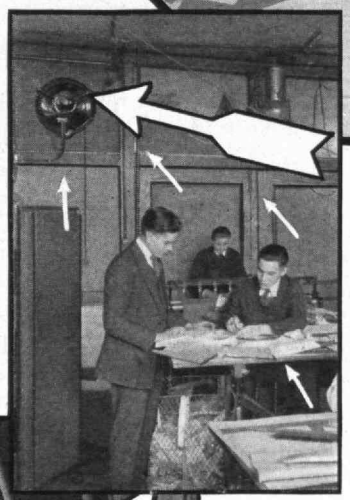
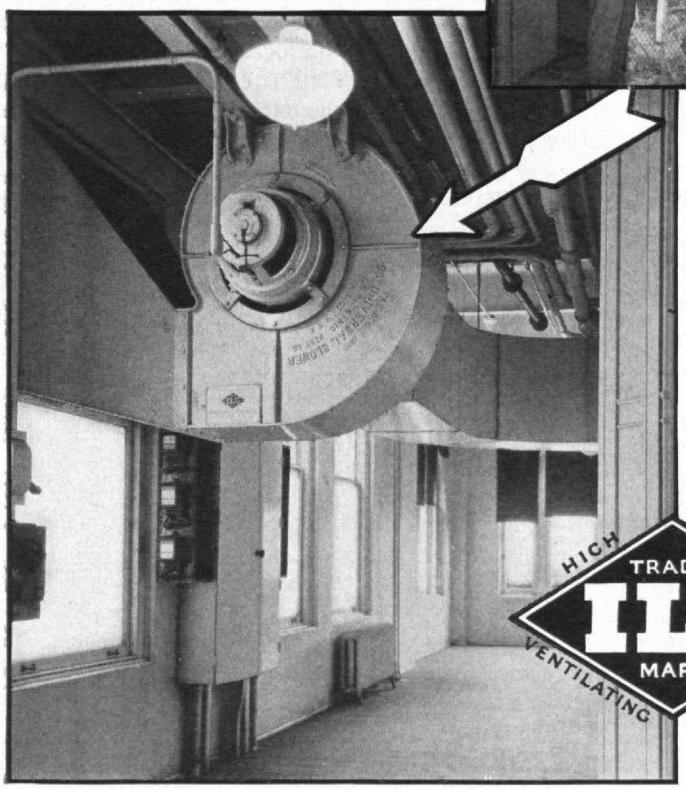
When you buy or specify any Ilg product you are assured of reliable, economic service. There is no split responsibility between the motor manufacturer and the makers of Ilg equipment. We build, *under one roof*, a complete line of motor driven fans and blowers and unit heaters. Our engineering department will be pleased to confer with you on any problem of heating or ventilating. Mail coupon for full information.





ILG Unit Heaters

The problem of distributing and holding heat to the floor in spacious buildings is effectively solved with Ilg Unit Heaters. Using live air tempered with steam or hot water, they take the air at *low* velocity and deliver it to the floor level at *high* velocity.



ILG Electric Ventilators

The Ilg line of ventilating equipment includes electric ventilators from 12″ to 72″ in diameter, for practically every requirement. The Ilg is the only electric ventilator made with a *fully enclosed, self-cooled motor.*

ILG Blowers

(Direct Connected)

From the standpoint of compactness and simplicity, the Ilg Direct Connected Blower is an innovation. Just *four legs to bolt down*, and the installation is complete. Designed for low power consumption, quiet operation at high speed and pronounced efficiency under severe working conditions.

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Manufacturers of Electric Ventilators — Blowers — Unit Heaters

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☐ Electric Ventilators ☐ Unit Heaters ☐ Blowers

IS HISTORY A SCIENCE?

(*Continued from page 344*)

a new term for a new thing. The problem, however, must be attacked from the point of view of method. That is the crux of the whole situation.

I do not wish to be dogmatic as to the nature of this new method. It will require a great deal of thought and the thought of a great many people. It will probably require many tentative experiments, some of which may appear ludicrous or fantastic to the old school historian. The work will be pioneer work in a new field. As such, unfortunately, it will not allure many under our present system. To work out a new method and experimentally put it into practice might prove the death blow of professorial ambitions whereas a new "standard" history or a monograph on the old and approved lines might spell another thousand a year salary. Nor, as a nation, are we much given to exploring untried fields of thought. The attempt, if it comes in America at all, will probably be made by some gifted amateur entirely disconnected from a faculty and a board of trustees, as was the case of Henry Adams, who, as I recently pointed out in *The Yale Review*, was the great pioneer in this possible reconstruction of method.

I will not here repeat what I said there but will merely make a few suggestions to end this article, which is itself merely a suggestion. For one thing, I think the new method will completely reverse a marked trend in the present one. True science is bound to tend as far as possible toward simplification. In the first place a very special field of research has to be delimited. In the second place the multitudinous data observable in that field have to be reduced to patterns, to laws. If, for example, mathematics dealt only with individual numbers from one to infinity we would have the infinite results of possible permutations and combinations but no science of mathematics. For this reason, I am inclined to look with a very unsympathetic eye upon all the efforts to complicate rather than to simplify the data with which the genuinely scientific historian would have to deal. We are told by one school of historians that the historian of the future must have a good working knowledge not only of the "history" of his period but of anthropology, psychology, psychiatry, physiology, medicine, and so on. In the first place no man can have a good knowledge, kept up to date, in all the fields this school suggests as essential. A little knowledge has always been a dangerous thing, and never more so than now when a scholar can scarcely keep up with the printed literature in even two languages of his specialty. A background of even moderate knowledge is useful to any one, and quite as much to the historian as to any one else, but a smattering of all these 'ologies is not going to make him more "scientific." The path toward that goal, it seems to me, lies in simplifying rather than in complicating the data with which he must deal.

As I said in *The Yale Review* I think that, for the reasons I there gave, Henry Adams failed in his effort to establish a new method, but I do think he was, in this respect of simplification, wholly on the right track. The school noted above would have us get history nearer to a science by complicating its data. For (*Concluded on page 382*)

from START to FINISH

THEW LORAIN

IN THIS MODERN AGE, few, if any, construction jobs are carried on without dependence on modern excavating and material handling equipment from start to finish.

Huge powerful shovels dig the basements; shovels grade the new roads; shovels and cranes dig foundation footings; cranes drive protective sheathing; clamshells unload concrete aggregate; cranes unload, distribute and erect structural steel; cranes set bridge girders, lay sewer pipe, set cut building stone, etc.,—not to mention the part played by cranes and shovels in the mining and quarrying of the natural resources so essential to the Construction Engineer.

Since 1895, when Thew designed and built the pioneer full revolving shovel, The Thew Shovel Company has constantly modernized it's excavating and material handling equipment to keep pace with engineering advances and demands.

Culminating these many years of experience is The Thew Lorain and Universal line of product. It consists of Shovels, Cranes, Clamshells, Draglines, Skimmers, and Locomotive Cranes built in ½ to 1½ yd. dipper capacity—in 5 to 20 tons lifting capacity.

From start to finish, the Construction Engineer depends on excavating and material handling equipment for the success of his plans. From those who realize the relation between quality equipment and greater job profits, these machines, abounding in mechanical features and advantages, warrant a thorough investigation before purchasing.

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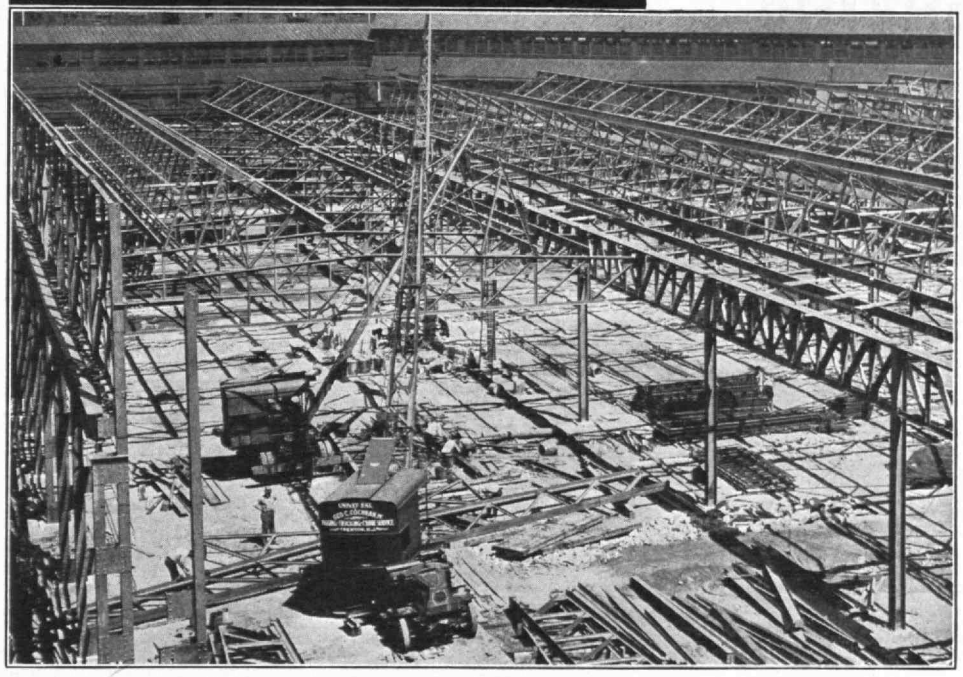

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THEW CENTER DRIVE

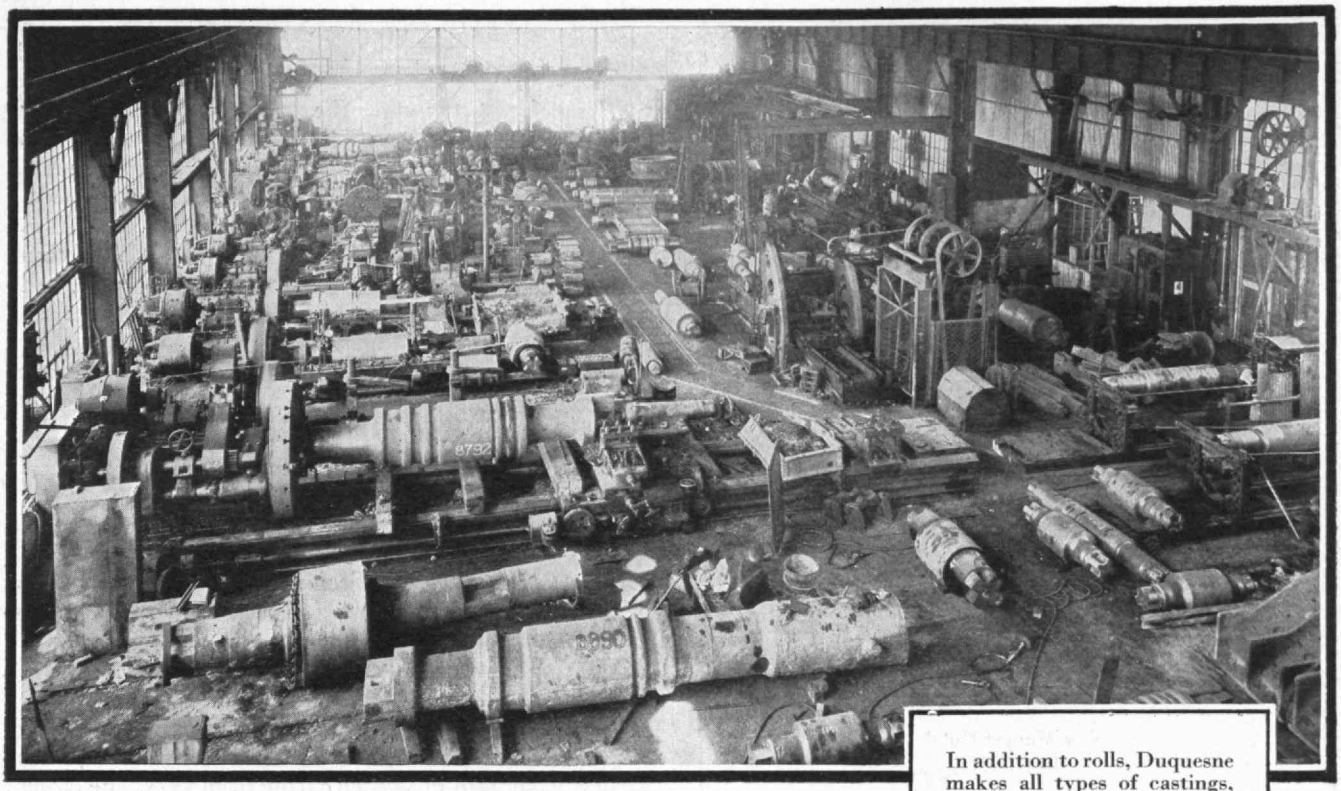
Catalog gladly furnished to construction engineers or student engineers.

IS HISTORY A SCIENCE?

(Concluded from page 380)

example, it would have us know all about epilepsy in order to be really scientific about Caesar or Napoleon, and so with other great men and other diseases. One great trouble with history already is that we cannot see the wood for the trees, and this school would have us paint every leaf. Such knowledge might be useful for the narrative school of history but I think it could only be detrimental for the scientific. Adams, on the other hand, and that was his great contribution, insisted that history must be de-personalized in order to bring its phenomena under laws and make its events predictable. If we are to attain to laws in history (and sociology) that shall be of any use in assisting us to modify or direct the social organism, they must be laws that have nothing to do with individuals. A vast modern society that can be thrown out of gear by somebody's fit of epilepsy is about as dependable as a dynamo that can be put out of order by a mosquito bite. The sciences that have built our modern material environment have not been based on that sort of individualizing. Nor can history and sociology if they are to keep pace with the physical sciences and be of any real use to us in guiding events. Narrative history of the accepted sort has its use in this, as in other respects, and the more it is written in the scientific spirit, and with the hand of art, the more useful it will be, but our social machinery, due to science, has become so vast and complicated that we need something more to guide us than the mere story book of the past.

It may be that there are no laws governing history and man's social life, that empires are mere whirls of cosmic dust obeying the laws of chance. If so, there is no hope for a science of history or for a rational ordering of social life. Man long thought the same about the powers of the physical universe but he studied them in the faith that they would be found to be governed by law and that knowledge of those laws would give him control over them. His faith was justified. A similar faith must be invoked in studying man himself and his institutions, and, just as in the physical sciences, a method applicable to the data must be devised. We cannot deduce laws from isolated cases. Every instant the present is merged into the past, and the historic past, short as it is, faultily recorded and cumbered with an immense amount of irrelevant personal detail, is our only storehouse of data, whether that past is of Woodrow Wilson or Alcibiades. To it we must go as the scientist to his laboratory. We have none other. The historian who is engaged in reporting it without fear and without favor is providing us with indispensable material but we must learn how to use it. We must develop a method of dealing with it, whether along the lines I suggested in *The Yale Review* or others better adapted to the purpose. The essential problem today of history as a science is the problem of method, and the man who, like Henry Adams, makes a tentative effort to solve it need expect no applause, but he will be contributing to that infinitesimally small but infinitely precious store of pure thought that eventually moves the world.



THE ROLL SHOP
BACK OF DUQUESNE ROLL ENGINEERS

A roll shop capable of producing rolls of all sizes . . . from the smallest to the largest . . . in the rough, semi-finished or completely finished.

From the above illustration you will see that the physical ability is here to produce exactly what you want, when you want it.

But back of this is the skill of each artisan and the enthusiastic effort he puts forth to serve you 100%.

Thus the Duquesne Roll Engineer has a roll-making background that is more than a mere plea for your business.

Makers of Chrome Molybdenum, Duquesne Special, Straight Carbon Steel Rolls, Grain and Iron Alloy Rolls.

In addition to rolls, Duquesne makes all types of castings, some of which are: —

CAR CASTINGS:
- Center Plates
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- Cylinder Heads
- Cross Heads
- Center Frames
- Truck Frames
- Bumper Brackets

CASTINGS FOR STEEL MILLS:
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- Pinions
- Coupling Boxes
- Cylinders
- Die Blocks
- Housings

CASTINGS FOR SHEET MILLS:
- Annealing Boxes and Pots
- Charging Boxes
- Pinions
- Coupling Boxes
- Cylinders
- Die Blocks
- Housings

DUQUESNE
DUQUESNE STEEL FOUNDRY COMPANY . . . PITTSBURGH, PA.

THE NEW SWEDEN

(Continued from page 347)

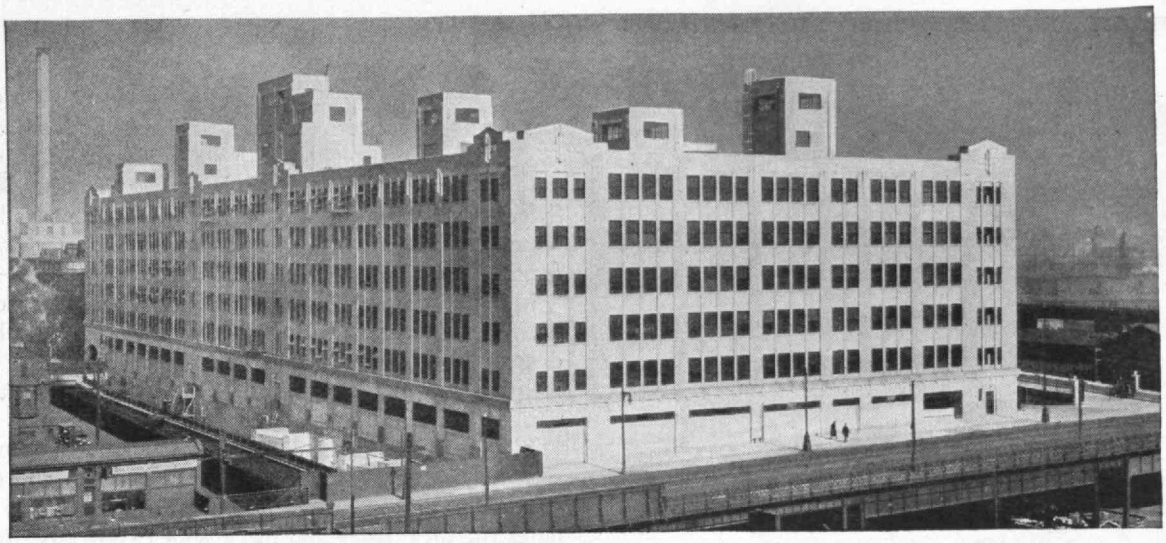
the Kransfors Company. The modern sawmills center along the north Baltic shores, and they are turning out products with a value of nearly $100,000,000 per year. The production of lumber is not increasing at present. There was a time when the Swedish forests were cut, as they still are in this country, without much idea of conservation and reproduction. This time is long past, and scientific forestry with stabilization of output has replaced thoughtless destruction. It is aimed to replace by new plantations the areas cut over. There are now in the country more than 2.5 million acres of forests that have been raised by forest culture since 1905. Soviet competition seems to be the dark shadow hovering over the Swedish lumber industry.

Manufacturing Industries

Wood Pulp and Paper. Of considerable more importance is the wood pulp industry, which has developed in a remarkable manner in the last thirty years. The Swedish production of wood pulp is the third largest in the world following the United States and Canada and amounts to about 2,000,000 metric tons per year. Paper manufacturing is also carried on; in fact it is an ancient industry, the earliest paper mill in Sweden dating from 1573. The larger part of the wood pulp is, of course, exported. There are about 400 paper and wood pulp plants, the selling value of the product being well over $150,000,000. Naturally the wood pulp industry centers, like the lumbering, along the north Baltic coast of the country. Veneers and pressed boards and other products of the forests which will be rapidly developed during the next years.

Steel. A dozen internationally known plants make an exceptionally high grade steel from the pig iron of the country. They are mostly located in the central part, west and northwest of Stockholm. Steel is manufactured by the Bessemer process but largely by the open hearth process. A smaller amount is made by electric smelting. As to quantity the industry is not so impressive, but the quality is exceptional and known all over the world. It is noteworthy that the Gillette razor blades are largely made from Swedish steel. Bofors, Uddeholm, Domnarvet, Sanduiken are among the well-known steel plants.

Other Industries. It is perhaps not so surprising that on the basis of these excellent raw materials industries embracing various kinds of machinery should have been developed, but it is remarkable that their worth should have resulted in the world-wide distribution which has been accomplished. Agricultural machinery is manufactured to a value of $5,000,000. Machinery for wood working and pulp has a value of $4,000,000. Internal combustion motors, crude oil engines and Diesel motors, largely for the ship building industry, account for from $5,000,000 to $10,000,000, and they are manufactured in such far-famed shops as Bolinder's, the Göta Works, and the Penta Works. De Laval's steam and water turbines — Swedish inventions — are distributed widely. Another industry which has developed on an imposing scale is the manufacture of the De Laval separator for skimming milk. These machines are sold all over the world. Not long ago, I met an *(Continued on page 386)*



New Freight Station

at Philadelphia for

THE PENNSYLVANIA

THE new Freight Station which we have designed and built for the Pennsylvania Railroad at 32nd and Chestnut Streets, Philadelphia, is a part of the railroad's extensive Philadelphia improvements now being made.

The structure is of reinforced concrete, contains 9,150,000 cubic feet, has a sixty-foot triple-deck driveway extending the whole length of one side, and its platforms have a tail-board capacity for 120 large trucks.

Construction began on March 15th and the structure was entirely completed and in use on November 15th—a construction period of eight months.

The work was done under the direction of the Pennsylvania Railroad organization: Mr. Robert Farnham, Chief Engineer Philadelphia Improvements; Mr. T. P. Watson, Principal Assistant Engineer Philadelphia Improvements.

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MAXIMUM RETURN TO CLIENTS PER DOLLAR INVESTED

THE NEW SWEDEN

(Continued from page 384)

agent of this concern in Peru, and I will say that cows are certainly not plentiful in that country. The annual value of separators is said to be nearly $10,000,000. The Swedish petroleum stoves, it seems, have proved most attractive in many lands and this little industry accounts for $2,000,000 in value of products.

Machine tools and metal working machinery do not occupy such a spectacular place as some of the other industries, but they have a well deserved fame. I might mention another invention, the Johannson precision gauge, which is also of international importance.

Bicycles do not seem to be a very vital mode of propulsion on this side of the sea, but in Sweden and on the continent, they are essential. The Swedish article dominates the local trade and has a wide export distribution. The annual value is about $6,000,000.

One cannot go far abroad without seeing the A. G. A. lights. The manufacture of these accumulators and automatic light signals for beacons, railways, cars, and steamers is an important item. They are based on the inventions of the Swede Dalen.

S.K.F. is another magic name, which is met all over the world; it stands for *Svenska Kullager Fabriken*, or Swedish ball bearings, the invention of another Swedish engineer named Wingquist. Exports go to all countries and have an annual value of about $6,000,000.

Westerås, a town not far west of Stockholm, is the headquarters for ASEA, a welcome abbreviation for *Allmänna Svenska Elektricitets Aktiebolaget*, the General Electric of Sweden. In vast plants all kinds of electric, particularly high tension, machinery is manufactured. It can be readily understood that with far-reaching electric development in the manufacture this should be a fairly busy concern. In fact, its products have an approximate value of $8,000,000 per year.

Swedish engineers have played an important part in electric inventions. Jonas Wenström constructed the first Swedish dynamo for direct current; and later in 1890 he obtained a patent for a three-phase motor and power transmission. The first power transmission line was built in 1893.

Foreigners who have had disastrous experiences in telephoning on the Continent are amazed at the surpassing efficiency of the Swedish system, which is operated by the Government. It is used even more than in the United States, particularly for long distance conversation. I remember my surprise in 1913 in finding that the telephones of *Telefon Aktiebolaget L. M. Erikson* were used in the City of Mexico. Since that time the fame of the Erikson phones have spread. You will find them in London, Paris, and Madrid, all over Mexico and South America; you find them in Turkey, in Cape Town, and in Australia. They represent one of the industrial triumphs of Swedish engineers.

The Match Industry. Swedish matches were first manufactured under a Swedish patent at Jönköping about 1858 and the little boxes with the mysterious inscription *Tända endast mot lådans plån* (ignite only against the side of the box) soon became known all over Europe. This industry alone deserves a long *(Continued on page 392)*

LEADERSHIP

in portable electric tools

WITH the acquisition of several new lines, Stanley now rounds out a complete line of portable electric tools for metal working and wood working.

The latest additions include such proved tools as:

Stanley-Ajax Electric Hammers

Stanley-Unishear Electric Sheet Metal Cutting Tools

Stanley-Crowe Safety Saws both electrically and air operated.

It is the intention of the Stanley Electric Tool Company to give the trade under one well established name a line of portable electric tools of the highest quality, every item of which has been proved by long continuous use "on the job."

Catalogs of the full line or any particular item will be sent upon request.

THE STANLEY ELECTRIC TOOL CO.
New Britain, Conn.

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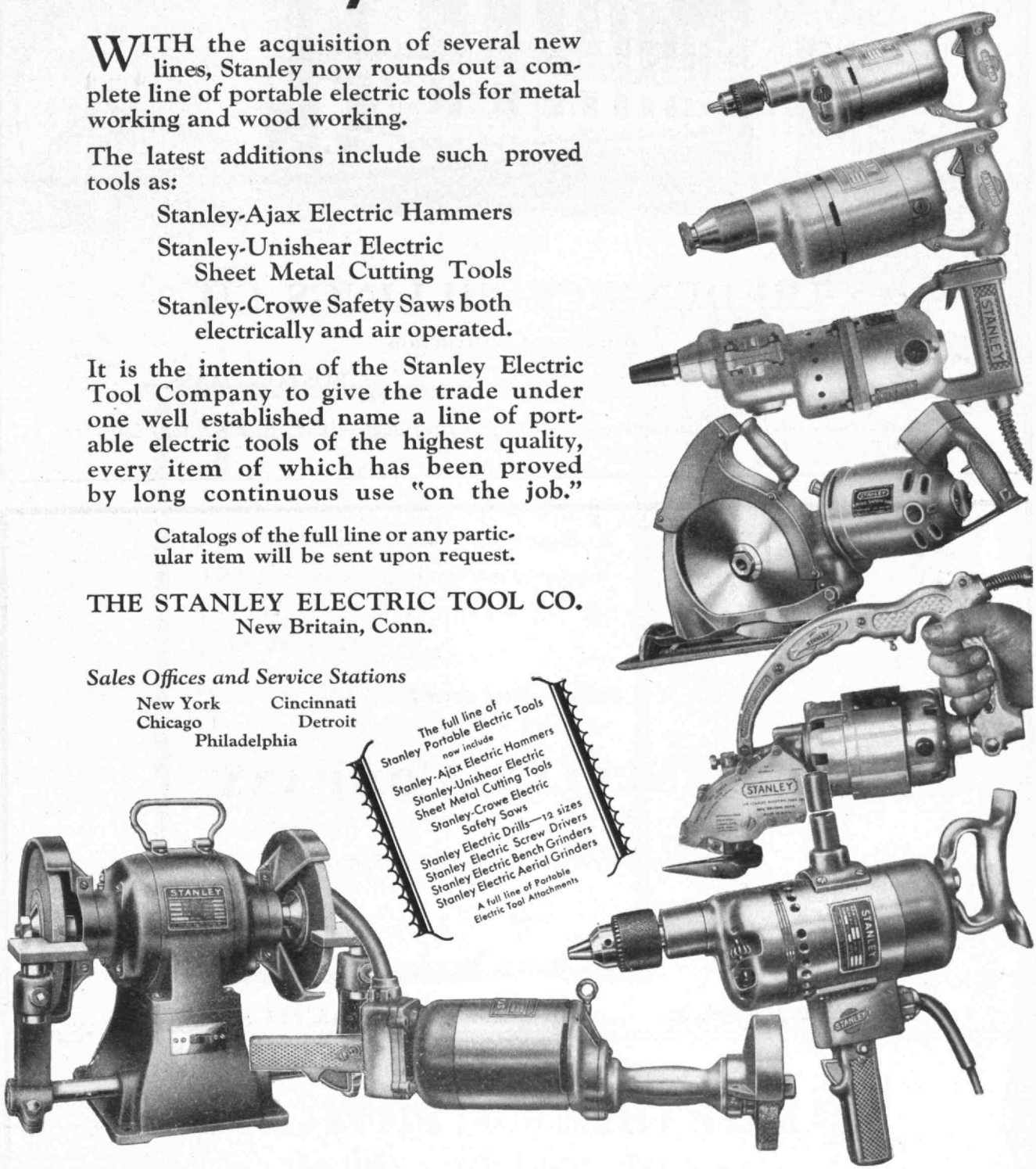


STANLEY ELECTRIC TOOLS

THE NEW SWEDEN

(*Continued from page 386*)

chapter. Other factories were established in Sweden and elsewhere, but it was not until 1917 that it began to make real international history. About that time the entire match industry was amalgamated as a single concern which now has ramifications all over the world under the leadership of Ivar Kreuger.

The "match trust" now controls the manufacture not only in Sweden but in most other countries. I think it is true that the best matches still come from Sweden, but plants are located in Finland, Poland, the Baltic countries, and elsewhere. Its political importance has grown enormously; it has obtained monopolies in many countries; it has loaned vast sums to countries in need of money. Through the International Match Company it is said to control the production in the United States. It looks now as if increased duties would force the match trust to establish manufactories in this country.

At any rate the Swedish production still leads. We are told that the exports from Sweden alone amount to 46,000 metric tons (How many matches to the ton?), having a value of well over $10,000,000.

Miscellaneous Industries. I have touched only the high spots of Swedish commercial activity and particularly those of international interest. There are dozens of other industries, of course; for instance, the quarries and the cement plants, the glass and ceramic industry and the industrial arts industry. All these have an aggregate value of product of about $40,000,000. The porcelain of Rörstrand and the exquisite cut glass ware of Orrefors are well known. The important textile industry yields products with a selling value of over $100,000,000. Food and drinks, rubber, leather, and chemical industries produce their large share.

All in all it is a creditable exhibit, well comparable to the best results accomplished elsewhere. It shows what can be done by the efficient combination of engineers, scientists, and financiers, and a determination to utilize to the utmost, and at the same time conserve, the natural resources.

Shipping. Hardly a ton moves out of the country, except by water. The Swedes are a race of seafaring people, and like the other Scandinavians have developed a large mercantile marine, which carries the imports and exports over the seven seas. Sweden has a total gross tonnage of about 1,500,000. Eight or ten large overseas shipping companies carry the trade to all important points in the Americas, Asia, Africa, and Australia. A line of passenger liners equal to the best (*Svenska Amerika Linien*) connects Gothenburg with New York.

Consumption of Alcoholic Drinks. Since the time of the convivial gods of heathen Scandinavia, drinking and fighting have ever been the bane of the Nordic people. The fighting, of course, has subsided. I think it may be said that in spite of some recent increase in crime the population is extremely law-abiding. It was stated recently that three murders were committed in 1929; this compares favorably with Chicago.

Many people are interested in the attempts to control the evils of excessive drinking and perhaps a few words on this subject will not be amiss.(*Concluded on page 394*)

THE NEW SWEDEN

(Concluded from page 392)

I knew well the situation about 1870 to 1880, and frankly, it was bad. Drunkenness was common and the almost unrestrained production of brandy (*brännvin*) from grain and potatoes produced deplorable results.

At the present time the conditions are vastly improved. During two weeks in Stockholm I saw exceedingly few intoxicated persons. Since 1890 there has existed a strong movement for prohibition and no doubt at the present time about half of the population favor it. A plebiscite in 1922 gave a majority of 43,000 votes against total prohibition. At the present time Finland is the only one of the northern countries in which prohibition exists and, if newspaper reports are to be relied on, the conditions there are extremely grave and not very different from those prevailing in the United States at the present time.

About 20 years ago when it became clear that something must be done to control the excessive misuse of alcoholic drinks, the system of Dr. Ivar Bratt was introduced which, with modifications, still exists. Beverages containing less than 3½% by volume of alcohol are considered non-intoxicating and are freely sold. The most common drink in the restaurants is half a bottle of such beer. Beverages containing more than 3½% can only be bought from the shops of the system which are controlled by a single company. Government representatives are in the majority on the Board of Directors and the share holders receive only a limited interest on the capital. There is also a State Control Board to supervise the traffic. Beverages containing more than 22% by volume of alcohol are limited to a certain maximum amount which may not be more than four liters per month, but this only to one person in a family. In most cases the amount allowed is only two liters per month, and no *Motbok* (control book) can be issued to any person below twenty-one years of age, I believe. The book is only good at one distributing shop.

In restaurants a strictly limited amount of wine and liquor may be consumed with the food. The open saloon is non-existent. Temperance committees in each community supervise plain abuse of drinks. The *Motbok* may be taken away or an individual failing to provide for his family or dangerous to the community may be detained in a public institution according to the law of 1916.

The system may not be perfect, but it seems to work very well indeed and is approved by the people. I find in the Yearbook the statement that there were 45,972 arrests for drunkenness in the country in 1920, which number in 1926 was reduced to 29,438, equivalent to 0.5% of the population.

I have ventured to place before you this brief story of the recent industrial development of a country not rich nor populous but with the determination of doing the best that can be done with its resources. It seems to me that besides its general human interest, the story points to some dangers of industrialization which are parallel to those which confront us and that it also contains some lessons which we may do well to take to heart.

To select a reliable accredited school for your son, refer to the Preparatory School Directory on pages 412 and 413

A TOWN FOR THE MOTOR AGE

(Continued from page 351)

the same safety they can play in the park adjacent to their home or join in sports at the big playfield near the school.

The greater part of two super-blocks has been completed in accordance with this plan and about 160 families are living there. It is too soon to say that the new street plan is 100% efficient as a traffic safety device, but already the experiment has gone far enough to justify optimism.

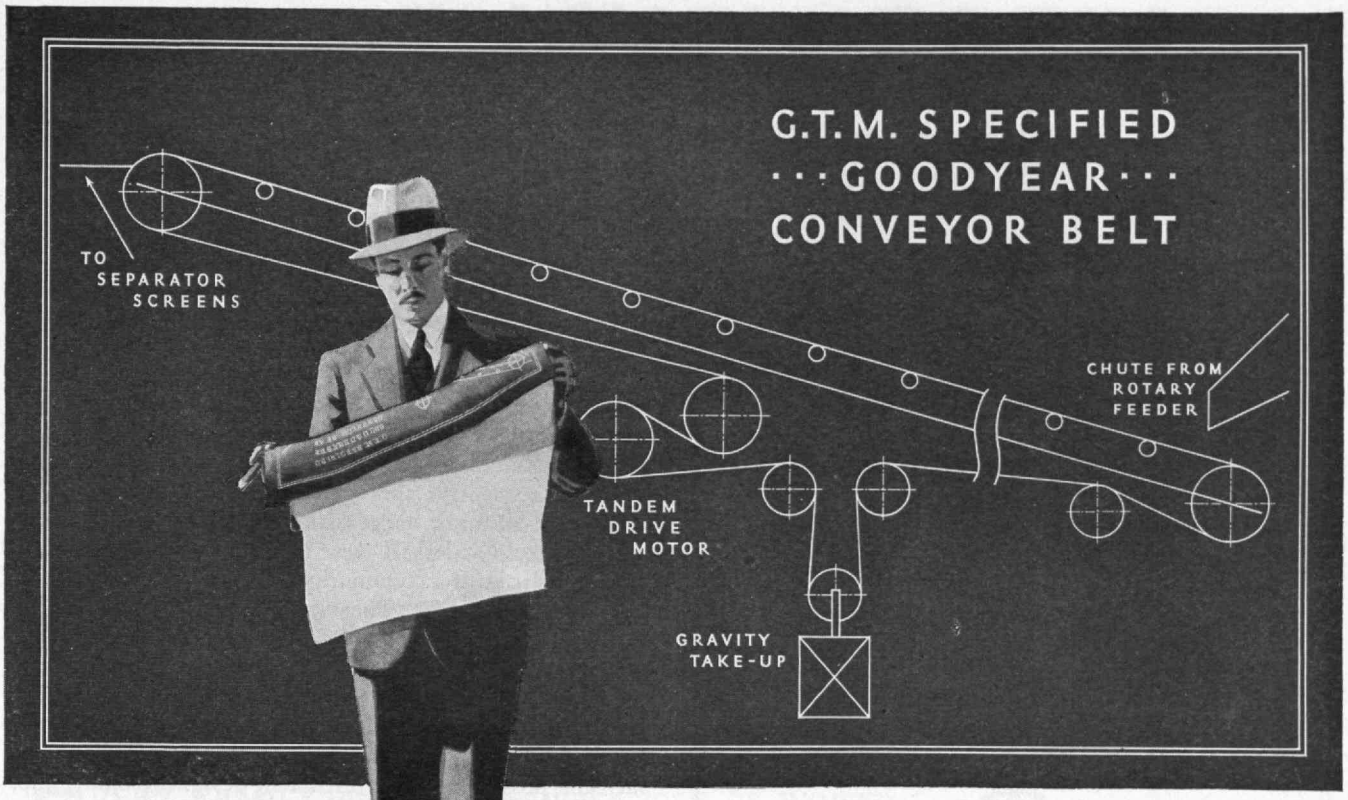
In its business sections, still largely at the planning stage, Radburn follows more closely the general lines of the gridiron system but with important innovations and improvements which are expected to obviate its shortcomings. Road areas will be generous enough to permit a wide, central lane for fast-moving through traffic with separate side roads giving access to shops and offices and providing for short stops. Parking for longer periods will be provided in the center of the block, a sort of hollow square formed by the business buildings and all loading and unloading of goods will take place at platforms on this side.

Plans for the business section are comprehensive, since Radburn is designed not merely as a dormitory suburb for New York but rather in the nature of a satellite town with its own commercial and industrial sections, and at least a part of its population living near its work. In this sense it is one of the first experiments in the direction of the regionally planned growth of the New York area and the decentralization of some of its industry and business as well as population.

Big city crowding is evident nowhere so much as in the lack of adequate, healthful, housing accommodations for that great bulk of the population which may be classified as the families of moderate income. Ordinarily the homes available to them offer a choice between a cramped apartment tucked away in some bleak structure, or individual houses, but little larger, standing shoulder to shoulder in identical rows in some equally bleak suburb on the fringe of the city. In either case the opportunities for making a family home are few; light and air are at a premium and no provision whatever is to be found for children's play.

Wasteful planning directed more toward the creation of real estate values than the economic utilization of land, plus wasteful construction in small units and the absence of technical skill in design are largely responsible. To these must be added the very substantial item of high financing costs incident to so completely speculative an industry as the production of moderate priced homes and apartments.

In such a situation it is not surprising that the whole question of planning and building moderate priced homes and communities has made little if any progress. The use of skilled technicians and research are confined in all industries to the large producing units, and the home building industry, although it bulks big among the business activities of the country, is made up almost entirely of small individual units. The individual builder is usually unable to afford skilled architects and such things as research or a scientific approach to his problem are just so many words. He hasn't the slightest *(Continued on page 398)*



He has counseled

hundreds of industries . . . thousands of individual businesses

For fourteen years now the G.T.M.—Goodyear Technical Man—has been on the job. Deep down in mines, high on bridges and skyscrapers, on docks and dredges, amidst the pulleys of industry everywhere, he has been steadily at work.

Today the G.T.M. brings to industry an extraordinary experience and an extraordinary service. He is a composite of many skills, trades, processes. Everywhere are records for industrial achievement following his visits—gains in time, production; savings in cost.

BELTS
MOLDED GOODS
HOSE
PACKING

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GOODYEAR

A TOWN FOR THE MOTOR AGE

(*Continued from page 396*)

inclination to experiment, but on the contrary is eager to repeat designs and arrangements which for one reason or another have proved popular and sold or rented readily.

The City Housing Corporation of New York, which is building Radburn, approaches the problem from an entirely different angle. It was organized by men who sensed the civic and social need for a scientific attack on the problem of providing better homes and better communities.

Before undertaking the Radburn experiment, the company completed the building of Sunnyside Gardens, a model community in Queens, New York City, where its plans for a scientific approach to problems of community and home building, large scale operation and the use of the best technical skill were tested. In little more than four years it built a community which now has a population of about 5,000. The ready sale of the Sunnyside houses, their quality, character, moderate price, and above all, the garden environment created within 15 minutes of the heart of the city give a fair index of the experiment's success. Because of the rigid requirements of the City of New York's official street plan, there was little latitude possible in this respect in designing Sunnyside. Nevertheless the planners, headed by Clarence S. Stein, former Chairman of the New York State Committee for Housing and Regional Planning, and Henry Wright, former Chairman of the American Institute of Architect's committee on community planning, found it possible to break away from the traditional treatment of back yard areas and substitute for them pleasant community gardens and play space for children. Another innovation was the setting aside of a three-and-a-half-acre park for residents, an advantage enjoyed by few sections of the greater city, even the most expensive.

In the planning of Radburn, Mr. Stein and Mr. Wright have associated as consultants Frederick L. Ackerman, during the War, Chief of Design, Housing and Town Planning Division, United States (*Continued on page 400*)

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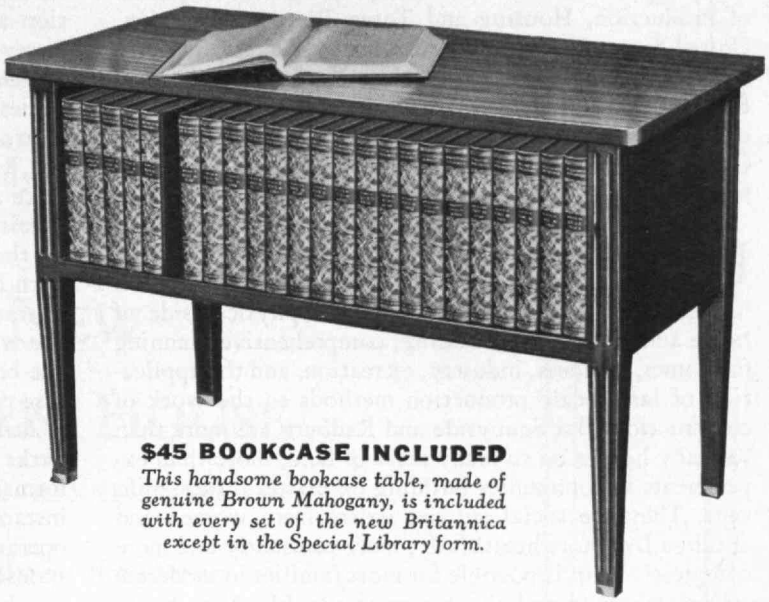

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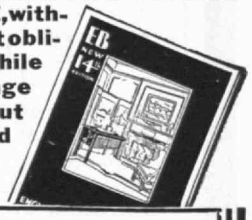

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A TOWN FOR THE MOTOR AGE

(*Continued from page 398*)

Shipping Board; Robert D. Kohn, during the War, Chief of Production, Housing and Town Planning Division, United States Shipping Board; Thomas Adams, formerly Director, Regional Plan of New York and Environs, Russell Sage Foundation; and Raymond Unwin, technical expert for the Greater London Regional Planning Committee, and President of the International Federation for Housing and Town Planning.

UP to this point our interest in Radburn, Sunnyside Gardens and the work of City Housing Corporation has concerned itself chiefly with the physical side of home and community building; comprehensive planning for homes, business, industry, recreation, and the application of large scale production methods to the work of construction. But Sunnyside and Radburn are more than so many houses on so many acres of land, more than experiments in community building no matter how significant. They are social entities where men, women and children live more healthfully, more pleasantly and more completely than is possible for most families in moderate circumstances in and about a great city like New York.

At Radburn the residents have a common interest in considerable community property. In some eight or ten years from now when the town is completed there will be a total of about 180 acres of park land and much other property used by the community and administered in its interest. The community property at Radburn has been deeded to a non-profit membership corporation created for the purpose and called the Radburn Association, consisting at this time of officers of City Housing Corporation and representative civic leaders of Northern New Jersey. As the community takes form and is better able to function as a group, it is planned to turn the powers and duties of the Radburn Association over to the residents.

In addition to holding title to the community property, the Radburn Association is clothed with power to enforce architectural and other restrictions and to perform necessary community services which are not yet furnished by the semi-rural borough of Fair Lawn, of which Radburn is politically a part. Thus the Radburn Association operates a sanitary and storm sewer system, supplements the waste collection, police, and fire service supplied by the borough and employs a recreation director to supervise playground activities.

At Radburn, again the common interest of residents in parks and other community facilities has resulted in the formation of a community organization known in this instance as the Citizens' Association. This association, operating through some 15 committees, already has sponsored some lively community activities. It has set up a health center with a physician and nurse in charge; it has provided a visiting bedside nursing service; it has established a small circulating library; it is developing groups for recreation both indoors and out; it has set up the Radburn Players in the field of drama; it has provided a Children's House with kinder- (*Continued on page 402*)

A TOWN FOR THE MOTOR AGE

(*Continued from page 400*)

garten equipment and facilities for a nursery school and the teaching of handicraft; it has provided for loan exhibitions of art and has under way many other projects for community activity.

THE financing of the Radburn project is noteworthy, for many similar civic developments have been proposed, but always they have imploded when subjected to economic tests. The City Housing Corporation was incorporated in 1924 under a New York State Charter which limits the dividends on its capital stock to 6%. Alexander M. Bing is President and other directors include Dr. Felix Adler, John G. Agar, Leo S. Bing, William Sloane Coffin, Johnston de Forest, Thomas C. Desmond, '09 Mrs. Lucius R. Eastman, Douglas L. Elliman, Professor Richard T. Ely, Arthur Lehman, Frank Lord, V. Everit Macy, John Martin, Mrs. Joseph M. Proskauer, and Robert E. Simon.

The principal officers and the directors of the City Housing Corporation serve without salary and dividends on the stock (which have been paid regularly since the incorporation of the company) are limited to 6%. In other respects, however, the City Housing Corporation is managed like any other business corporation and its financial success proves that American cities can secure better housing for people of moderate means, on a 6% basis, if they only will.

Up to the spring of 1930, the Corporation has spent on site purchases and construction work nearly thirteen million dollars. About half of this sum has been obtained on ordinary real estate first mortgages from trust companies and insurance companies. The much more difficult equity capital has been obtained by the sale to nearly 650 individuals interested in better housing of approximately $2,700,000 City Housing Corporation 6% limited dividend stock, $2,000,000 second mortgage collateral trust 6% bonds, and $2,325,000 6% Radburn notes. All of the securities have been sold at par, directly by the company, without underwriting or commission profits to anyone, and the same policy will be followed in regard to the additional capital which is now being sought for the completion of Radburn.

Design and construction on the large scale of the City Housing Corporation of course result in quality at a low cost. The company is aiming to show what modern and efficient business methods can do, when applied to the small house problem. The financial strength of the company and the moderate returns accepted by investors in its securities (with none of the high interest charges and commissions which are the bane of ordinary small house second mortgage financing), of course make possible very easy financial terms for the home purchasers. The City Housing Corporation sells houses with only a 10% payment down, and monthly payments, like rent, extending over periods as long as 15 years.

The average commercial builder has little interest in a safety traffic scheme or a new park system, but he is interested in the fact that the Radburn super-block plan requires less land for streets, less (*Concluded on page 404*)

A TOWN FOR THE MOTOR AGE

(Concluded from page 402)

paving, shortening of all the utility lines such as sewers, gas and water. He will be interested in safety streets and parks perhaps because his prospective customers demand them, but the prospect of saving on land, paving, and utility costs has to him an immediate appeal. Perhaps this is why Radburn has already been visited and its plans studied by real estate developers from 20 different cities in the United States and its basic planning scheme has been adopted for several new suburban developments, one near Buffalo, N. Y., one near Miami, Fla., one near Chicago, Ill., and another near South Bend, Ind. The list is not a long one, but Radburn is still only a little more than a year old. The experiment continues. As the new town grows it should demonstrate with increasing force and clarity the value of town building by plan under the guidance of civic spirited and philanthropically-minded business men and investors competently aided by intelligent architects, engineers, and contractors.

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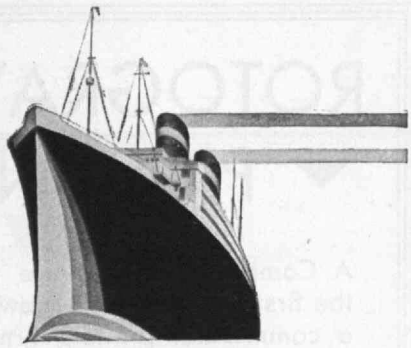

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INSTITUTE GAZETTE

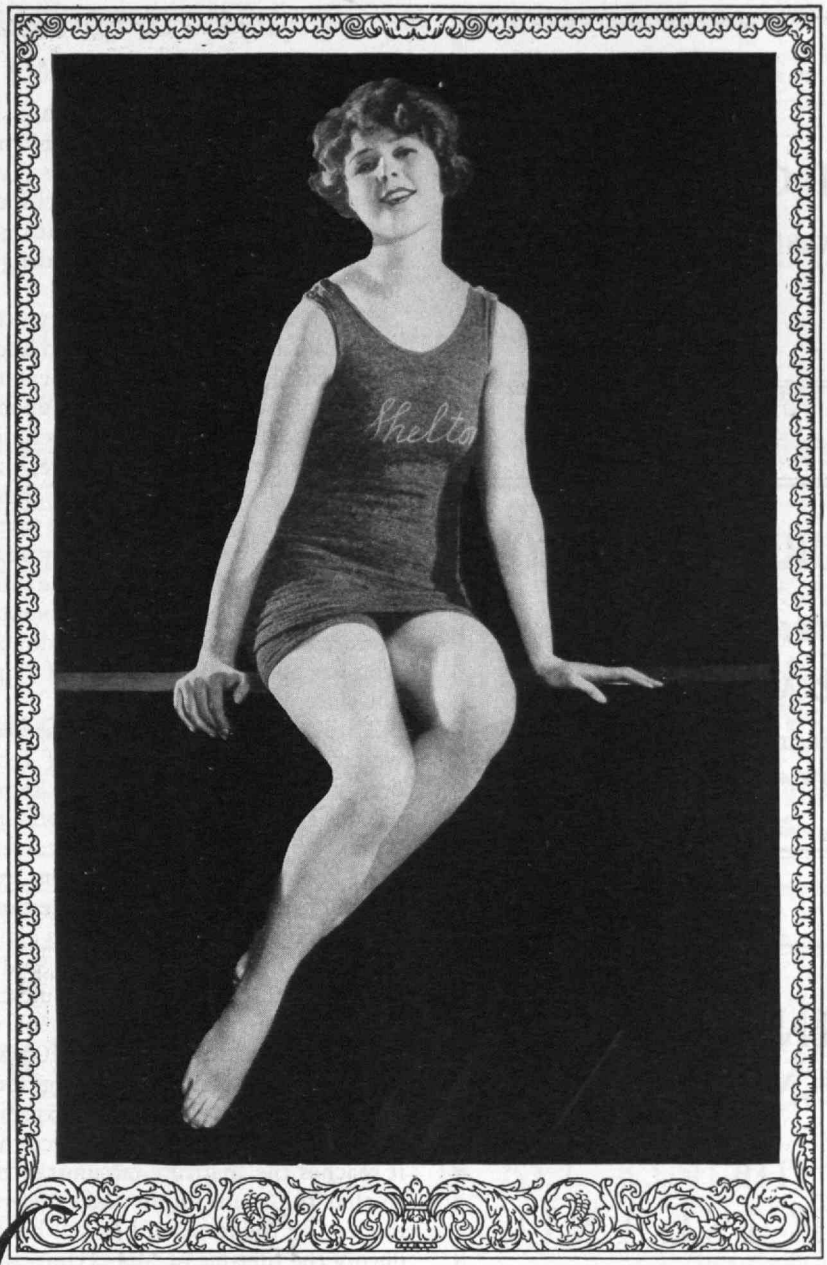
(Continued from page 369)

ground in December, 1906, and the firm was employed to design and superintend its rebuilding. This was the beginning of an extensive engineering practice in factory design among food specialty packers in this and other countries. A substantial part of the practice of the firm was concerned with the design and practical development of special machines and devices to which Tripp devoted his keen inventive ability and sound engineering training. Among these may be mentioned a wire fence loom, a pneumatic street sweeper, and auto-cultivator, a coal briquetting press, a perforated card tabulating machine, and an automatic corn popping machine. The last named device, brought as a crude, undeveloped idea to McMeans and Tripp, was perfected and designed in practical operating form in 1913 for the Holcomb and Hoke Manufacturing Company who acquired the rights under the patent and who have since manufactured the device in very large quantities, distributing it throughout the United States. Much of Tripp's time and attention was given to the manufacturing and improvement of this machine during 1916, and on March 1, 1917, he resigned his connection with McMeans and Tripp to accept the position of engineer and manager of the Holcomb and Hoke plant at Indianapolis.

Immediately after this our country entered the World War and this change in business connection led Tripp into a field of activity doubtless very different from that which he had foreseen. As factory manager for the Holcomb and Hoke Manufacturing Company, he soon found himself engaged in the production of rifle grenades for the United States Army and he became Secretary of the Rifle Grenade Manufacturer's Association. This work brought him in contact with powder manufacturers, and in 1918 he went to Wilmington, Del., to become associated with Ernest du Pont and others in the Ball Grain Explosives Company. As plant manager of this company, he was engaged in loading rifle grenades and in the development of a flashless cannon powder for the United States Navy. Although trained as an electrical engineer, his activities henceforth were to be largely in the field of chemical engineering. His success in this new direction demonstrates the fact that a Technology man, thoroughly grounded in any one of the Institute's engineering courses, can, by his own efforts, succeed in the field of another.

Research in, and the manufacture of, explosives constituted Tripp's professional work for the remainder of his life. The Ball Grain Explosives Company was succeeded by the United States Flashless Powder Company in which Tripp continued his association with Ernest du Pont and of which company he was Secretary-Treasurer. This company, to which Tripp devoted his energies henceforth is engaged in the manufacture of flashless military powder.

Born with an inventive mind, Tripp was always looking for a short cut for accomplishing whatever came to his attention in connection with his work. He took out forty or more patents for inventions covering a remarkably wide field. Perhaps the most valuable of these was that of the Tripp tabulating machine in 1915. In this machine, by means of punched cards, a vast amount of data may be recorded, tabulated, and *(Concluded on page 410)*



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INSTITUTE GAZETTE

(Concluded from page 408)

totaled. Tabulation machines had been in use prior to Tripp's invention but they required much manual manipulation in their operation. Tripp's invention was a notable improvement over previous machines in that its action is wholly automatic, thus eliminating the necessity of any manual operation, greatly increasing the speed, and reducing operating cost.

Tripp had all of the ingenuity attributable to the traditional Yankee. With his sound Technology engineering background, his keen mechanical mind brought useful results in practically every field upon which it came to be focussed. But besides sound technical accomplishments and ingenuity, he had much more, viz., a strong and sound character. The combination of these attributes and his universally friendly coöperative spirit, his conscientiousness and his persistent industry made him a dominant factor in everything which he undertook. And with these attributes he had great modesty. So that among all those who are now left behind doubtless there is not one who has not kindly memories of Tripp, nor one who does not sincerely mourn his loss.

Throughout his life, Tripp was keenly interested in the welfare and the development of Technology and he was deeply appreciative of the fact that the sound training which Technology gave him was the foundation upon which he built his successful career. Although absence from Boston prevented him from frequent attendance at Institute and class gatherings, he came to these whenever opportunity offered. A few years ago he consulted a classmate as to the manner in which, and for what purposes, a bequest could be made that would be most useful to the Institute. Possibly as a result of the suggestion thus offered, he made a bequest of $100,000 to the Institute in his will. The clause providing for this bequest is of interest because, while clearly expressing the desire of the donor as to its application, it recognizes that by the time it reaches the Institute circumstances may have changed so that other use might then preferably be made of the money. By the terms of his will his estate is held in trust during the lifetime of Mrs. Tripp, after which the trustee is directed "To pay over the sum of One Hundred Thousand Dollars ($100,000), absolutely and free and discharged from any trust, unto the Massachusetts Institute of Technology, a corporation of the State of Massachusetts. The corporation is requested to use this amount for dormitory construction, but may make such other use of it, or any part, as may seem advisable to them, after the bequest becomes available."

The last 12 years of his life were spent in Wilmington, Del., where he made his home at 2003 Van Buren Street, although at the time of his death he was preparing to move to a new home recently purchased in Wawaset Park. He was an active member of the First Unitarian Church of Wilmington.

For several years he had suffered from anemia. Two days before his death a throat ailment developed and with this added complication he sank rapidly. Tripp's first wife died in 1902, shortly after their marriage. In 1904 he married Miss Elizabeth Minton Wright. Mrs. Tripp and a sister, Miss Mabel K. Tripp, survive him.

REUNION BULLETIN

(Concluded from page 372)

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Final Instructions

WITH this issue the *Reunion Bulletin* concludes its work of disseminating information about the great gathering in June. All ticket applications, to be filled in the order of receipt, should be addressed to the registration committee, Room 3-106, M. I. T., Cambridge, Mass. Complete instructions about registration and reservations will be included with the registration material which is to be mailed out the middle of May by George T. Welch, '21, in charge of registration.

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Honored

THE Boston Society of Civil Engineers at its annual meeting elected LEWIS E. MOORE '02, President, and RALPH W. HORNE '10, Vice-President. JOHN B. BABCOCK '10, and HAROLD K. BARROWS '95, Professor of Railway Engineering in the Institute's Department of Civil and Sanitary Engineering, were made directors. JAMES W. ROLLINS '78, was awarded the Desmond Fitzgerald Medal for the best paper presented by a member of the Society, which was titled, "Pier Construction for the Mid-Hudson Bridge at Poughkeepsie." ROBERT S. WESTON '94, won the sanitary section prize for the best paper and ARTHUR W. DEAN '92, the highway section prize.

¶ To EARLE L. OVINGTON '04, the presidency of the Early Birds — fliers who won their aerial spurs prior to 1916.

Bequest

¶ By CHARLES A. TRIPP '93, of $100,000 for the construction of dormitories for the Institute. Before his death on February 11, he was Secretary-Treasurer of the United States Flashless Powder Company, which product he invented.

Spoke

¶ FRANK P. MCKIBBEN '94, at a national meeting of structural engineers on welded frame structures.

¶ DR. KARL T. COMPTON, President-Elect of the Institute, to the Faculty Club on March 31, on the work of the Science Advisory Committee of the Chicago World's Fair.

Appointed

¶ ARTHUR D. LITTLE '85, President of Arthur D. Little, Inc., to chairmanship of the committee of chemistry exhibits at the Chicago World's Fair. Also on the committee are ROBERT T. HASLAM '11, Non-Resident Professor of Fuel and Gas Engineering, FREDERICK G. KEYES, Professor of Physico-Chemical Research in charge of the Department of Chemistry, JAMES F. NORRIS, Professor of Organic Chemistry, and WILLIS R. WHITNEY '90, director of the research laboratory of the General Electric Company.

¶ JOSEPH W. BARKER '16, Associate Professor of Electrical Engineering at the Institute from 1925 to 1929, to be Dean of the Engineering School at Columbia University.

¶ BIRNEY C. BATCHELLER '86, to be a member of the Vermont Legislature.

¶ ALFRED H. SAWYER '88, to be President of the Reversible Collar Company of Cambridge, succeeding the late WILLIAM G. SNOW '88.

¶ HORATIO N. PARKER '94, chemist and bacteriologist for the Department of Health of Jacksonville, Fla., to be chairman of the program committee of the Division of Foods and Drugs of the American Public Health Association.

¶ ROBERT S. WESTON '94, President of the New England Water Works Association and member of the executive boards of the American Institute of Consulting Engineers and the sanitary engineering division of the American Society of Civil Engineers, to be a member of the committee on plumbing of the Department of Commerce Building Code to establish basic plumbing principles and their application.

¶ ARCHER E. WHEELER '95, to be of technical assistance to the Soviet Gipromez in developing the production of their metal resources.

¶ WILLIAM C. BIRD '12, to be Vice-President and General Manager of the Prophylactic Brush Company which has recently been taken over by the Lambert Company of St. Louis.

¶ NEWELL L. FOSTER '15, to be a member of the firm of Fred C. Church and Company of Boston, to handle the insurance for Lowell, Mass.

Conferences

¶ FREDERICK G. KEYES, Head of the Department of Chemistry at the Institute, is to be an American delegate from the American Society of Mechanical Engineers at the World Power Conference to be held in Berlin in July. He will also attend, as a delegate, the International Union of Chemistry in Liège, Belgium, in September. OSCAR C. MERRILL '05, is also to attend the World Power Conference. JAMES F. NORRIS, Professor of Organic Chemistry at the Institute, will attend the Conference of the International Union of Chemistry.

¶ SYLVESTER Q. CANNON '99, presiding bishop of the Church of Jesus Christ of Latter Day Saints (Mormons), at the one hundredth annual conference at Salt Lake City, attributed the low death rate in his denomination to abstinence from intoxicating liquors, tea, coffee, and tobacco. The death rate in the Mormon church is 7.5 per 1000.

Deaths

¶ Reports have come to The Review since the last issue of the decease of the following:

¶ HECTOR J. HUGHES, on March 1. He was a member of the Faculty in the Department of Civil Engineering at the Institute from 1914 to 1919 in conjunction with the Harvard Engineering School, of which he had been Dean since 1920.

¶ EDWARD S. SAFFORD '68, on December 31. He was connected at one time or another with the construction of nearly every railroad in this country and of many in Canada, Mexico, and Haiti.

¶ SAMUEL M. FELTON '73, on March 11, in Chicago, Ill. Active in railroad circles since his graduation, he bore the title of chairman of the board of the Chicago, Great Western Railway at the time of his death. During the War he was director general of military railways. He was a Life Member of the Corporation and a member of the Visiting Committees to the Department of Civil Engineering and Naval Architecture and Marine Engineering.

¶ GEORGE BOWERS '75, on February 28. Mr. Bowers was formerly city engineer of Lowell, Mass. The account of his death appears in the '09 Notes.

¶ MAJOR FRANK H. BRIGGS '81, on April 2. As well as being an active and loyal Secretary of his Class, he was chairman of the Advisory Council on Athletics from his graduation till 1910, and then was General Treasurer of the Athletic Association. In 1916–17 he was a representative-at-large on the Alumni Council.

¶ WILLIAM P. JOHNSON '82, on August 24, 1926. He had been President and later chairman of the board of directors of the Crown-Willamette Paper Company in Oregon City, Ore., before his death.

¶ CHARLES H. MORRILL '96, on November 27. The greater part of his life was spent in teaching and he was President of the Barnstable County Teachers Association and of the State Normal School Teachers Association.

¶ CHARLES SAVILLE '05, on February 15. In Dallas, Texas, he was director of public health and later manager of the Chamber of Commerce. Since 1926 he was a special agent of the Union Central Life Insurance Company. Although he was registered as a member of the Class of '05, he was also associated with the Classes of '04 and '06.

¶ ROGER D. COURTNEY '23, on February 29, in Boston. He had been in ill health for some time.

NEWS FROM THE CLASSES AND CLUBS

1868

I forgot to include in my account of my trip to Tokio and my visit with Baron Dan a description of our parting which was one of the prettiest occasions of the kind that I ever remember. After throwing paper ribbons from the upper deck of the vessel to the upper deck of the wharf and vice versa, I had all the ribbons in my hand, and the other end of each ribbon was in the hand of some member of Baron Dan's family. I lifted one ribbon and shook hands with one of the members and so on with them all. I then took off my hat to the whole group. This little ceremony was repeated over and over until the vessel broke away from the wharf and parted all the ribbons.

The following biography of Edward S. Safford, who died on December 31, 1928, was misplaced and should have appeared before. His sister sent in the account of his life. "Edward Stanley Safford, born in Boston, September 6, 1847, was graduated from the English High School in 1865. He entered that same year the Institute as a member of the first graduating class, that of '68. The school had just been organized and he took the course in mining and civil engineering.

"He went out on the first survey for the Atchison, Topeka and Santa Fé Railroad on July 7, 1868, as rodman from Topeka to Burlingame, Kans. — twenty-nine miles. Later he went on the long preliminary surveys, and as division engineer, had charge of the construction of the road from Emporia to Florence, forty-five miles. In 1871 he went back to Boston and married Mary Tolman Barney of Boston and took her to live in Peabody, Kans. In the fall of that year he laid out what is now the flourishing city of Hutchinson, on the Arkansas River, at the mouth of Cow Creek. He returned to Boston from 1872 to 1878 and was chief engineer of the New London Northern Railroad from 1878 to 1880. Then he was division engineer on the West Shore Railway, then the New York West Shore and Buffalo Railroad, first at Newburgh in charge of construction in Orange County and then at Buffalo in charge of construction in Genesee and Erie counties, and the Buffalo Terminal. In 1884 and 1885 he was on the Philadelphia branch of the Baltimore and Ohio Railroad, living at Upper Falls, Md., in 1885 he established his home in Arlington, Mass.; in 1886 to 1888 he was principal assistant engineer on the Mobile and Birmingham Railroad in Alabama; in 1888 to 1890 he was chief engineer for the Shelby Iron Company at Shelby, Ala. In the winter of 1890 and 1891 he made surveys on snow shoes in Nova Scotia. In 1892 to 1895 he was engineer in charge of construction of the Palisades Tunnel and the building of two large coal-shipping trestles on the Hudson River and a terminal for the New York Susquehanna and Western Railroad, all of which passed into the hands of the Erie Railroad Company soon after completion. In 1897 he went to Mexico and made surveys for the Chihuahua and Pacific Railroad from Chihuahua west for 200 kilometers, was made chief engineer of this road, made location and finished building the road by May, 1900; remained in Mexico until June, 1904, when he returned to the States to live in Somerville, N. J., and Sharon, Mass., for about three years. Then he became engineer for contractors who were eliminating grade crossings on the New York, New Haven and Hartford at New Bedford, Worcester, and Dorchester, Mass. He went to Haiti in 1911 on railroad construction and returned the next year and that closed his business activities. He took up genealogical research in 1915 when at Somerville, N. J. He went to Los Angeles in February, 1919, and lived in Hollywood for a short time.

"He was a member of the American Society of Civil Engineers and a Fellow of the American Geographical Society of New York. He died at Arlington Heights, Mass., on December 31, 1928, in his eighty-second year." — ROBERT H. RICHARDS, *Secretary*, 32 Eliot Street, Jamaica Plain, Mass.

1882

William Pierce Johnson, associated with the Class as a special student in chemistry during the year 1880–1881, died in California on August 24, 1926. He received his degree of A.B. from Dartmouth College, graduating with the Class of '80. After completing his studies at Technology he went to California and has been identified with the paper industry on the Pacific Coast since that time. He was President of the Willamette Pulp and Paper Company, with mills at Oregon City, Ore., until the formation of the Crown-Willamette Paper Company in 1914, continuing as President of the latter concern until 1923 when he became chairman of the board of directors, which office he retained until his death. — ALFRED L. DARROW, *Secretary*, 8 Beacon Street, Boston, Mass.

1884

The following were present at the Alumni Dinner in January: Dearborn, Fitch, Chase, Mrs. Tyler, Tyler, and Gill. Pratt has severed his connection with Stone and Webster in order to attend to his own affairs, and invited us to drop in to see him at his office, 89 Broad Street, Boston, Room 1130.

The proposition of the Secretary to publish a fifty-year memorial book after the style of the twenty-five year issue, while finding great favor at the Class Dinner last June, has been abandoned. It was found impossible to get information from nearly a quarter of the Class. The response financially was gratifying, and would have made the venture easily possible. The sums contributed will be returned shortly with such interest as may have accrued. The Secretary will, however, continue delving into class history both past and present, and matters of immediate interest to the Class, and send out informative circulars from time to time.

The Class Dinner will take place at the University Club, Friday, June 6. — AUGUSTUS H. GILL, *Secretary*, Room 4–047, M. I. T., Cambridge, Mass.

1886

In the February number of the *Medical Woman's Journal*, Dr. Alice G. Bryant has an interesting article on the subject of lip reading for the hard of hearing. The same issue contains a highly commendatory editorial on Dr. Bryant's paper. When we realize that there are some three million children of school age in the United States who have defective hearing, the need of facilities for systematic training in lip reading becomes indeed evident.

A recent number of the magazine section of the *New York Times* contains a seven column article describing in popular language, the monumental work done in bringing an abundant supply of water from the Catskill Mountains to New York City. This stupendous undertaking, carried on under the direction of J. Waldo Smith, was finished some thirteen years ago. Although this supply furnishes several hundred million gallons of water daily, investigations are now being carried on to find additional and more distant supplies, in anticipation of the increasing needs of the growth of population of the city.

Batcheller is enlivening the leisure of a retired manufacturer and engineer with some very active and useful service as a member of the Vermont Legislature. — ARTHUR G. ROBBINS, *Secretary*, Room 1–270, M. I. T., Cambridge, Mass.

1888

The Class has suffered an irreparable loss in the death on February 14 of its beloved and devoted Secretary. William Gage Snow married Miss Eleanor R. Beal on February 23, 1892, and of their five children, three survive — William B., who succeeds his father as Treasurer in general charge of the Reversible Collar Company and Middlesex Products Company, and Mrs. Elizabeth Chandler, and Mrs. Eleanor Gray.

1888 Continued

After graduating, he took a pleasure trip across the country for two months, and then entered the employ of the B. F. Sturtevant Company as draftsman, and later was in charge of the installation of heating plants and was a salesman. He joined the Walker and Pratt Manufacturing Company in Boston as a heating and ventilating engineer in 1894 and stayed there until March 1899, when he became connected with the S. Homer Woodbridge Company, at that time a subsidiary of Stone and Webster. From January 1, 1901, to November, 1905, he was located in Philadelphia as engineer with Francis Brothers and Jellett, Inc., having charge of the preparation of plans and specifications for heating, ventilating, and power plants and complete mechanical equipment of buildings. From November, 1905, to April, 1918, he was with Warren, Webster and Company of Camden, N. J., as New England manager in charge of both the engineering and commercial sides of the work. During the latter part of this time he was chief engineer of the Webster system of steam heating. While he was located in Philadelphia he gave a course on heating and ventilation at the University of Pennsylvania, and after his return to Boston gave similar courses at the Institute.

He has written several books on subjects relating to heating and ventilating. He was a member of the American Society of Mechanical Engineers. In 1909 he was President of the American Society of Heating and Ventilating Engineers. He was a member of the Brae Burn Country Club and Duxbury Yacht Club. When he resided in Philadelphia he was Vice-President of the Technology Club there. In April, 1918, he was called in an emergency by the directors to become Treasurer and General Manager of the Reversible Collar Company of Cambridge, a business founded by his father, and from that time on he was actively engaged in the manufacture and sale of surface-coated and cloth-lined papers and cloth and paper products. In the summer of 1929 he succeeded his brother, Walter B. Snow, as President of the company and held the positions of both President and Treasurer until his death.

While he had been somewhat below par for some time with a high blood pressure, he kept his unfailing evenness of disposition, and his friends had no idea that there was anything serious the matter with him. He died of a heart attack while crossing his chamber, where he had been confined for a few days with an attack of indigestion, and from which he had about recovered. His death was a great shock to all his friends and classmates. His funeral was from Trinity Church, Newton Center, of which he was a vestryman, and the following members of the Class were present: Buttolph, Collins, Cheney, Runkle, Roberts, Sawyer, who was one of the pall bearers, Sweetland, Thompson, and Webster. The interment was in Mount Auburn Cemetery. Mrs. Snow remains at 11 Devon Road in the home which they shared so happily for so many years. Snow was the Life Secretary of the Class and no one could have surpassed the fidelity and untiring devotion which he gave to the Class, and we all know how greatly his efforts have made it a Class to be proud of.

Edwin S. Webster is spending the last part of March and the first half of April in the South. — Charles A. Stone and his wife have been sojourning at the Bermudiana Hotel in Bermuda. — Walter K. Shaw and his wife returned early in March from an extended trip to Mexico City, Arizona, New Mexico, and Los Angeles, and report a fine, interesting trip. — Miss Elizabeth Runkle, second daughter of our classmate, has been elected head of the student body at Vassar College. — Besler called at the office of the Reversible Collar Company to extend his sympathy and condolences on the loss of their Treasurer and President. Alfred H. Sawyer has been elected President of that company to fill Snow's place. — ALFRED H. SAWYER, *President*, 17 Wood Street, Concord, Mass.

1890

Your Secretary will arrive home from Santa Barbara on April 15. As soon after that as he can collect the reins, further notices will be sent to those of you who have replied to your Secretary in answer to the first notice, saying whether or not you might be with us at our Fortieth Anniversary Reunion on Thursday, June 5, at the Belmont Spring Country Club. Arrangements will be made as to where to meet, probably at Walker Memorial that morning, and autos will be ready to motor out to the Club. The day will be one of informal enjoyment and renewal of old acquaintances and also a chance to let the others meet the wives and daughters that have kept us in our proper places all these past forty years. If you are interested in golf or tennis bring your clubs or racquets. From replies already received we shall have a good group, so if you have not already replied to your Secretary, do so at once. If you cannot be with us your Secretary would be glad to receive a letter from you that he can read to those present.

Elton and Mrs. Walker of the Tome Institute in Maryland are on a motor trip headed south. Then they go to California and then to New England to be with us at our Reunion. — Charlie Hayden was in Santa Barbara one night in February, but the nearest your President and Secretary got together was to hold a telephone chat. Charlie will be with us in June.

John O. DeWolf, who was laid up from a fall in January, we are glad to report is out again. At least as our Class Representative, he attended the last Alumni Council Meeting. — Mr. and Mrs. F. P. Royce and their daughter were in Bermuda in February.

Pierre S. du Pont appeared before the House Judiciary Committee in Washington on February 27 on the prohibition question. Pierre said that after a five year study he had concluded that prohibition is a failure and in this opinion it is safe to say most of his classmates agree. — GEORGE L. GILMORE, *Secretary*, 57 Hancock Street, Lexington, Mass.

1892

The following letter from Kales comes just in time to fill the space allotted to '92: "I dropped you a Christmas card just after we left Japan, and I intended to write a letter but it is hard to write while traveling. As I think I told you in my Christmas card, Mrs. Kales and I left Detroit in October to attend the World Engineering Congress which was held in Tokio during November. In San Francisco we saw Fred Harvey and his sister, who had come down from their home in Galt to see us off. Fred is a mountain of brawn and muscle, as one would expect, and he wears a full beard. His blue eyes twinkle just as they did when he anchored our '92 tug-of-war team. His wife could not come down because she had some engagement to sing in Sacramento, and could not break it.

"When we got on board the Dollar Line *President Jackson*, we found Walter Newkirk and his wife also headed for the Congress. It was great fun to be with them. In many ways our whole trip as far as Shanghai was a Technology party. There were more men from the Institute than from any other school.

"In Honolulu we were entertained by the Misses Catton whose brother Percy was graduated from the Institute in 1916 or 1917. He was a lieutenant of mine and died in France. The Secretary of the Honolulu entertainment committee, William Furer, who like most secretaries carried the heavy load of responsibility, was while at Technology a classmate and chum of my brother, Francis Kales. How those Honolulu people did turn the place inside out to give us a good time! In addition to the general entertainments, the fellows gave a lunch at the Country Club to all the Technology men. About forty of us feasted together, while their wives gave a blow-out for our ladies.

"When we reached Japan, the Technology men were more in evidence than ever. The Japanese former students had given out pretty little buttons, which we wore, and by which we identified each other. The Japanese and Chinese engineers wearing these buttons were some of the most interesting people we met. Our Faculty was represented at the Congress by Professor Jackson, who had charge of the presentation of all American papers, and Professor Richards. When we landed, Professor Richards was immediately seized by Baron Dan, one of his former students, who is now one of the most influential men in Japan. Dear old Bobby Richards was certainly having a wonderful time whenever I saw him. The Corporation was represented by John R. Freeman, Charles T. Main, Calvin Rice, Jewett of the American Tel. and Tel. Company, and myself.

"Mrs. Kales has always had a grudge against Technology. Of course I am not quite perfect, and she always attributes every flaw in my character to the years I served in a certain penal institution in

1892 Continued

Massachusetts. Our son, as you know, was condemned to do time there, and for his sins of omission and other shortcomings, the unfeeling jailors made him work all of his summer vacations and serve a fifth year, though he was only supposed to be in for a four year sentence. Even Dr. Stratton's geniality never was able to warm up her feelings. She had sympathy for the poor victims, but nothing more. When she became acquainted with Professor Richards and Professor Jackson, it was hard for her to believe that these kindly, delightful men had been two of the hard taskmasters who ground the life and spirit out of the unhappy victims. And when she made the acquaintance of so many of the former slaves who took such pride in their years of servitude, her eyes began to be opened. She kept running across the most interesting men like Hazen and George Cottle, and finding to her surprise that they were Technology products. At a big dinner in Tokio she found herself placed between two Chinamen, one of whom was from Tientsin and the other from Shanghai. They were both full of interesting information on every subject she cared to discuss, and they spoke fine correct English. She asked them where they had acquired it and learned that they were both Technology graduates. Now she has changed her attitude. She has heard on all sides how hard it is to remain at the Institute without getting kicked out. Her boy, by means of great and noble efforts, managed to stay there for five years, while most of these others, myself included, were chucked out at the end of four years. She takes great pride in the fact that he is also a Technology man and succeeded in staying so long.

"After the Congress, we traveled about Japan for about three weeks, and then through Korea to Peiping. Wherever we went they gave us free passes on the railroads, and sent interesting men with us to explain and show us everything. I should have told you that Prince Chichibu, the brother of the Emperor, was the chairman of the Congress; and that he, the Japanese nobility, and their captains of industry, delayed us with receptions, garden parties, and all manner of hospitality and entertainment. In traveling we split up into parties of twenty or thirty because accommodations for foreigners are limited in all places except in Tokio and Kyoto. Wherever we went we were officially received, and we were given luncheons, teas, and speeches of welcome. We men had to take turns in replying to the speeches. Some of our oratory was wonderful to listen to, but as our hosts could not understand a word we said, it did not make any difference. In Keÿo (Seoul) the Japanese Governor-General, Admiral Viscount Saito, gave us a most delightful tea party at his house. At Mukden when we set forth on the South Manchurian Railway for Peiping, we found ourselves taken care of by K. P. Hu '19, the Chinese having followed Japan's lead by giving us a special train with everything free including meals.

"In Peiping, General Heu, the chairman of the provincial council, which is the equivalent of governor, gave us a wonderful Thanksgiving Dinner in the Detached Palace where he has his headquarters. It was very impressive driving there through the grounds along the frozen lake with our road lighted by flaming torches and lanterns. As we passed each great gate house, the guards turned out and saluted. Such a function had never before been pulled off, but the Chinese had heard of the hospitality showered upon us in Japan, and wished to be equally gracious. There were many courses at that dinner and the food was strange. Sharks fin soup, duck feet, birds nests, and I do not know what else. There was a yellow sort of drink that was served lukewarm, and every time you took a sip, a table boy brought the level of the stuff back to the top of your glass. It did not taste badly, and seemed like a very innocent drink with which to help down the unusual food. After a while I noticed that the conversation seemed much more witty, and when I looked across the table to the place where Mrs. Kales had been sitting, there were two of her, and I was uncertain which was my wife. So after that I confined myself to beverages that I knew.

"Mrs. Murray Warner was in Kyoto when we were there, and later at our hotel in Peiping. It was such a pleasure to see her again and to talk about Murray. He was a real prince of a fellow, as every '92 man from Technology knows. It had been my privilege to be with him three years in Exeter, to chum with him at Technology, and during the first years after we graduated. He was my best man when Mrs. Kales and I were married. Walter Newkirk became ill in Peiping and was in the hospital when we left with his wife taking care of him.

"We had planned going down to Shanghai by rail, the Chinese having provided for us the finest train that could be gotten together from their much depleted rolling stock, but when we were about to start news arrived that an army corps near Nanking had mutinied, looted Pookow, seized all the rolling stock, and made off to the north. Accordingly, we went down to Tientsin, and took the little steamer *Tungenow*, which after four days landed us in Shanghai.

"In Tientsin the Chinese Technology Alumni gave us a most delightful lunch, a tea party, and a dinner, all in one day. To meet them, their wives, and families, was a pleasure that Mrs. Kales and I shall never forget. Here is a list of the Tientsin people who entertained us at dinner: Mr. and Mrs. K. P. Hu '19; Mr. and Mrs. William Wang '23; and Mr. G. S. Ling '14. The other Technology people we met were: Mrs. S. S. Kwan (her husband, S. Kwan '19, was in Mukden so he could not be there); Mr. and Mrs. P. Y. Loo '16; Mr. C. Tsao '27; Mr. T. Y. Loo '28; Mr. W. Chang '28; and Mr. C. Tan '19. In Shanghai there was a great reunion of Congress members who compared their experiences in getting down from Peiping.

"Mrs. Kales and I spent about a week there with my brother, Francis Henry Kales '07. Francis is an architect there and has spent in the Orient all but about one and one-half years of the twenty-three since he left Technology. His work has covered everything imaginable. He had just completed plans for the new national university, which is to go up near Hankow, in the Gangtsi Valley, about 600 miles from Shanghai. About nine months ago, after he had made his preliminary plans, and gotten them approved by the Chinese committee, he became ill, and his doctor insisted upon a serious operation. He told his committee that he was to be laid up indefinitely, but that he would get them another architect who could use his scheme and carry out the work with such help as he would be able to give. They refused to consider such a thing. Though they were in a hurry to have the work pushed through, they said they preferred to wait for him to get well. After his operation he had pneumonia and was ill for a long time. While recovering he found that they had placed to his personal credit $10,000 in gold to cover future fees, if and when earned. When the Chinese put their trust in a man they trust him to the limit. Francis is a perfect genius in handling the Chinese styles of architecture. His design for the tomb of Sun Yat Sen was the only design submitted by a foreigner that received any recognition. His plan for this university group is the most wonderful thing I have ever seen. The Chinese contractors like to work for him because he always "sees them through," and always insists on their getting a square deal. He always makes his designs so as to use as much as possible the kinds of materials that are produced in the locality; and in that way he gets the maximum amount of building for the sum expended. I think he will make a great name for himself with this university group. It is the most important building project now going on in China. It is in the Chinese Monastic style and it gives me a thrill of pleasure that a Technology man, without political or financial pull, should be chosen by the Chinese to carry it out.

"From Shanghai we went down the coast to Sayon, only stopping a few hours at Hongkong. Then by auto we journied across Cochin China and Cambodia, spending four glorious days in Angkor exploring the wonderful ruined temples hidden away in the jungle. Then came Siam and the Malay Peninsula — a rail journey with many stops at places full of interest to us, but with nothing in them relating to Technology or to the Class of '92.

"When we reached Singapore, almost the first person I saw was our old classmate, Walter Newkirk. He had spent about a week in the hospital in Peiping, narrowly escaping pneumonia. Oh, but I did feel relieved to see him again looking so well and cheerful! Since then we have been through Java and the island of Bali, but I saw no Technology men. Some of our World Engineering Congress friends, however, turned up yesterday in Batavia,

1892 Continued

and there are seven of us here on the *Plancius* making our way back to Singapore. We are exactly 180° from you whether one travels east or west. It is 3:30 in the afternoon and hot, for we are but a few degrees south of the Equator. With you it is only half past three in the morning and I'll bet it is cold up in Boston this January 19 at that hour.

"Our plans for the future are simple. We shall take a Dollar Liner from Singapore to Columbo, and there we shall loaf for a couple of weeks. We shall not go through India, as Mrs. Kales and I were there in 1913, but we shall sail direct to Egypt, where we propose spending a couple of weeks. Then we shall go to France or Italy for a few days and jump on a steamer for home. Mrs. Kales wishes to be remembered to you. She often speaks of our '92 Reunion in Harwichport three years ago." — JOHN W. HALL, *Secretary*, 8 Hillside Street, Roxbury, Mass.

1894

F. P. McKibben recently addressed a national meeting of structural engineers on the general subject of welded frame structures. Since retiring from the professorship at Union University, McKibben has been doing consulting work and has given special attention to the development of welding in relation to the steel construction of large buildings. In his address he pointed out the great advantages of this method of uniting the elements of steel frames and stated that there was no instance where welding had been used in which any structural weakness had developed and predicted a great extension of this method of treatment. McKibben makes his home at Black Gap, Penna., and does a large amount of consulting service for various organizations.

Clyde N. Friz has recently been heard from after a long period. His office is 2010 Lexington Building, Baltimore, where he is engaged in the practice of architecture. — T. P. Curtis of Lord and Curtis is now located at 939 Boylston Street, Boston, having moved the Boston office of this organization uptown during the past year. Lord and Curtis are electrical contractors with offices in New York and Boston and they carry on a large amount of work of this sort. — Horatio N. Parker, who is chemist and bacteriologist for the Department of Health at Jacksonville, has been elected chairman of the program committee of the Division of Foods and Drugs of the American Public Health Association, which will hold its annual meeting at Fort Worth, Texas, in October.

A Washington dispatch thus refers to R. S. Weston: "Robert Spurr Weston of Boston has accepted membership upon the subcommittee on plumbing of the Department of Commerce building code committee. Weston is President of the New England Water Works Association and a member of the executive boards of the American Institute of Consulting Engineers and the sanitary engineering division of the American Society of Civil Engineers. The subcommittee on plumbing is composed of sanitary engineers and master plumbers who coöperate with experts of the Bureau of Standards in establishing basic plumbing principles and their application."

All members of the Class have received notices from the committee on publicity of the All-Technology Reunion and it is hoped that a large number of '94 men will be in attendance at this celebration in June. The outstanding feature will, of course, be the inauguration of Dr. Compton as President of the Institute, but there will also be a number of other features of particular interest, as will be noted from the notices which have already been issued.

A new group of dormitories is now under construction and it is hoped that these will be well along by the time of the Reunion. The Class of '94 will be represented in this group. I take this opportunity to suggest that we are still several thousand dollars short of our quota and that there are undoubtedly many in the Class who will wish to be represented in this gift to the Institute. Opportunity will still be offered for contributions to the class fund for this purpose. There will be a Class Dinner on Saturday evening, of which due notice will be given. Possibly also it may be found feasible to have some special class function on Sunday following the days of the Reunion. Suggestions will be gladly received by the Secretary. — SAMUEL C. PRESCOTT, *Secretary*, Room 10-405, M. I. T., Cambridge, Mass.

1895

Notice was received of a Class luncheon from Fred B. Cutter, to be held at the Railroad Club, New York City, on March 20. Fred is pushing along the arrangements for attending the Thirty-fifth Reunion at Mayflower Inn, Plymouth, Mass., on June 8 and 9.

Archer E. Wheeler of New York has been retained by the Gipromez, the Soviet institute for designing metal works, to assist in developing the Soviet production of copper, nickel, lead, zinc, tin, magnesium, aluminum, and antimony, according to a recent announcement made by the Amtorg Trading Corporation. This new technical assistance contract involves the sending to the Soviet Union of nearly a score of American experts in various phases of non-ferrous metal production. Some of Mr. Wheeler's recent engineering achievements include the construction of the Noranda smelter, the Rouyn district of Quebec, and the Nichols Copper refinery, now in course of erection at El Paso, Texas.

Our Thirty-Fifth Reunion at Plymouth, Mass., on June 8 and 9, is a settled fact. It will be a typical '95 Reunion and every one should make the effort to attend. We expect a good attendance and a good time is guaranteed. Make your arrangements accordingly, send in your reservations, and do not forget the date, June 8 and 9. — LUTHER K. YODER, *Secretary*, Chandler Machine Company, Ayer, Mass.

1896

The long promised report from Charlie Hyde on his European trip has finally come through and is given in full as follows in his own words: "After completing a two years' tour of duty as Dean of Men in the University of California at Berkeley, during which time I had carried on much of my regular teaching work as well as some outside professional activity, I found myself greatly in need of a rest. The Board of Regents granted a half year's sabbatical leave and so the trip to Europe was planned and carried out. Its main purpose, however, was concerned with the educational program of our three girls, the youngest of whom had just attained junior status in the University. We took with us our seven passenger car with the rear springs duly reinforced for hard service, a large sheet steel rear baggage carrier with a locking door, and heavy duty tires.

"We left San Francisco on May 12, 1928, on the new S. S. *California* and sailed through the Panama Canal touching at Los Angeles, Panama, and Havana. We sailed from New York for London on the S. S. *Carinthia*, arriving June 11. Between that date and the middle of November we motored many thousands of miles through England, Wales, Scotland, Holland, Belgium, Germany, Switzerland, Italy, and France, and made various more or less prolonged stops in places of particular interest. This trip covered much of the general territory traversed in 1923 but differed from that in many details. Together they have permitted us, as a family, to see a very large portion of the countries named and in a particularly detailed and comprehensive way.

"We spent three weeks in Oxford where Helen took a summer session course with a group of American university women; and three weeks in Cambridge where all three girls participated in an international summer session. Upon arriving in Paris in November, Helen and Katharine entered the Sorbonne, a branch of the University of Paris, and Margherita began work in the Parsons Art School.

"While located in Oxford and Cambridge I made a long trip through the industrial section of England and visited many water and sewerage works. Such works were visited in other countries later. In Paris I had the great good fortune to see Arthur Baldwin who is doing big things over there in a business way as a representative of the International General Electric Company.

"I left my family in Paris on December 27, 1928, sailing for New York from Cherbourg on the S. S. *Berengaria*, and on January 10, 1929, I was back at work in Berkeley. The family remained in Paris until the middle of March. They then made a marvelous two months' trip in the motor car down through central France and through Spain, visiting a large number of the most interesting cities, and returning to Paris through Brittany and the Loire or chateau country. They reached New York on the S. S. *Lancastria* at the

1896 Continued

end of May and spent the month of June in motoring through New England, when that region was a veritable fairyland. They reached home in Berkeley on July 4, 1929.

"Our entire experience was most rewarding and through the use of the automobile we were able to get very intimate pictures of the life and conditions of the people in all of the countries visited. Our trip was very seriously undertaken and a vast amount of study preceded and accompanied the experience."

Con Young who is wintering at Palm Beach has written a very interesting twelve page letter accompanied by Florida views. The Secretary knows that the Class would like to enjoy this letter in full, but it would string these notes beyond the elastic limit. Briefly, he has been busy every minute of his vacation with fishing, sun baths, cruising, and social affairs. One event of the winter was a visit to Stanley Motch '99, one of the partners of George Merryweather in Cleveland. Motch was located at Hobe Sound. The Youngs made one trip there for four days in February to visit the Motches, and a little later made a second trip to celebrate the arrival of George Merryweather with Mrs. Merryweather. It is worth while to quote Con's story of their meeting: "As we left the main road to turn in the inn drive, two old gray-haired cusses were walking along leisurely in bathing ulsters. The horn nearly scared them out of their bathing suits, but old George didn't get angry. That merry twinkle grew large in both eyes, and we made up with a French kiss. You see George learned this thing in Paris, when he was over there with a machinery exhibit at the exposition, and he started practising on me when he returned to home haunts and he hasn't gotten out of the habit yet."

The party made a cruise up the Indian River almost to Fort Pierce, and incidentally got stuck on a mud shoal for a while, besides doing some fishing in which George beat Con. Before the Merryweathers left Florida they paid a return call on the Youngs at Palm Beach and on their way back to Cleveland, stopped at Aiken, S. C., and elsewhere. Other Technology men whom Young mentioned as being in Florida were A. P. Sloan and Jack Dorrance.

Young emulated President Hoover in trying for sail fish but without much luck, although other parties around them were hoisting the white flag signal of success. One week Con and Mrs. Young got two whiting as a result of over a dollar invested in shrimp bait plus fifty cents lost in hooks and sinkers. Fresh water fishing is advertised in the published matter that comes from Florida, but Con says that it is largely fiction and in Con's opinion the best way to fish in Florida is either to buy or charter a cruiser for daily visits to the Gulf Stream or else sit in an armchair in the home library and get one's fun studying the scaly beauties shown in the promotion circulars of Florida towns and railroads leading thereto.

The first week in March was unusually cold in Florida and extra blankets and steamer rugs were necessary to keep from freezing over night. These cold snaps were not particularly good for Con's rheumatism, and altogether the months of January and February seemed not to have been of the beautiful Florida variety which the natives would have everyone think exist all the time. Con's plans were to leave Florida about April 10 to get back to work on the building of his new house on Cape Cod, and he also is counting on being present at the June Reunion. He reported that Joe Clary has a new house out Chevy Chase way at Washington and Joe's son graduated last June from Technology and is now rubbering around in Akron factories.

Fred Damon is another very fortunate classmate who went to Florida for three weeks in February and March. His object was apparently centered in practising golf in order to put himself in the best of form to compete with Joe Driscoll and John Rockwell when the season opens around Boston. Damon visited several places in Florida and tried the golf courses at every place. Now that Driscoll has returned from his southern trip and golf practice and Damon is also in good form, it will be seen that poor Rockwell will be a tail-ender when this trio gets together.

Gene Hultman and Mrs. Hultman were so pleased with their vacation at The Cloister Hotel, Sea Island Beach, Ga., last year that they repeated it this year. He returned to Boston April 1 after a leave of absence of thirty days. New appointments having been made by the city, Hultman now is ex-fire commissioner of Boston and actual building commissioner.

The death of General Dwight E. Aultman on December 12, has been previously noted. At that time he was senior brigadier general of the Army. He was survived by his wife, Mrs. Alma Aultman, a son, Dwight E. Aultman, '23, and two daughters, Mrs. Mark F. Doty and Mrs. R. A. Howard. Space is insufficient to give his military career after his graduation from West Point in 1894 followed by a year at Technology. He saw active service in Cuba in the Spanish-American war and over a period of several years acted as adviser to the native army in Cuba. In the World War the troops under his command participated in many important actions in France. After returning to the United States he was detailed as a student to the General Staff College at Washington and on completion of the course he was on duty with the War Department general staff. He became permanent brigadier general in 1921 and was subsequently stationed as commanding general at various points. His last duty was commandant of the field artillery school at Fort Sill, Okla.

General Aultman had been awarded the decorations of Commander of the Legion of Honor (French), the Croix de Guerre with two palms (French), a silver star citation for gallantry in action at Santiago de Cuba, July 1, 1898, and the distinguished service medal. Funeral services were on December 14 with full military honors and the burial was in the Arlington National Cemetery.

Sunday March 16 Mrs. Mary N. Woodwell was 105 years old. This event received wide newspaper publicity but classmates may not have realized that this notable lady was the grandmother of our J. E. Woodwell. He and Mrs. Woodwell came on from New York for the celebration and the Secretary had the pleasure of calling upon them at the Hotel Statler the next day. Woody reported that his grandmother seemed to be in good health except that she had a little upset which was apparently due to the excitement of the celebration. However, this upset developed into a cold, with the result that his grandmother died on Tuesday, March 18. Her funeral services were held on Thursday, March 20. The Secretary was unable to attend on account of important engagements, but flowers were sent in the name of the Class and the Class was represented by Charles Lawrence who came on from New York and also by Charles Tucker who motored over from North Andover. Mrs. Woodwell's death was so sudden that there was not time for Woodwell to come on from Lansing, Mich., where he had gone to look after a big job of construction work. He considered making the trip by airplane but flying conditions were very bad.

It is of interest that Mrs. Woodwell, except for poor eyesight, held her faculties to a remarkable degree and was active around the house and walked outside. The radio was her delight as it kept her in touch with current affairs. During her span of life the major part of the growth and development of the United States had taken place. In 1830 there was not a state west of the Mississippi River and the United States census of that year showed less than thirteen million population. New York City had 200,000 residents and Boston 60,000. Mrs. Woodwell was the mother of eight children, four of whom are living. There were also eighteen grandchildren, fourteen great-grandchildren, and two great-great-grandchildren. When the Secretary met him at the Hotel Statler he congratulated Woody on the notable position that he occupied of having a living grandmother and at the same time being the grandfather of two grand-children. An indication of the honor that was paid Mrs. Woodwell is the receipt of personal letters from President Hoover and other prominent people on her birthday.

Through Buster Crosby further details have been secured regarding Charles H. Morrill whose death occurred on November 27. For many years Morrill had been a teacher in the normal school at Hyannis and apparently he was one of those rare souls whom nature intended to be a teacher and who played a prominent part in molding lives of the students that passed before him. Touching tributes have appeared from the staff of the normal school and also in the local papers. Morrill died quite suddenly as the result of a heart attack. He was born in North Andover, Mass., June 1, 1873 the son of Dr. Charles

1896 Continued

P. Morrill. He was married June 17, 1902, to Miss Mary Elizabeth Wardwell, who with one son, Charles Wardwell Morrill, a student at the Harvard Law School, and a sister, Mrs. D. A. Morrill, survive him. Morrill was educated at Phillips Andover Academy, Bridgewater Normal School, Harvard University, and at the Institute. His teaching experience covered three years at the New Britain, Conn., Normal School and two years at the New Britain High School, but from 1904 until the time of his death he was at Hyannis, serving at times as acting principal in the absence of the head of the school. He was familiarly known as Uncle Charlie to all the students. He was prominent in church work and masonic work, was President of the Barnstable County Teachers' Association, and of the State Normal School Teachers' Association. Crosby reports that he had known Morrill since about 1907 and that he has yet to hear of an enemy that Morrill had made, and yet to hear anyone speak an ill word of him. He led a modest life but it touched a great many, especially those at an age when a push in the right direction meant the most in their lives, and the measure of his goodness will be felt in the world for many years to come through these contacts. His health had been good up to within a year of his death when his heart began to go bad.

Technology is publishing a new "Register of Former Students" which will appear shortly. There are a few members of the Class of '96 who have been lost for so long that the Secretary feels that it is almost hopeless to try to locate them. They are mainly men who were at Technology for only a short time. There are, however, a few men who were with us most of the four years and the Secretary presents their names as follows with the hope that some classmate may be able to supply information regarding the whereabouts of these men. George S. Bowes, graduated in mechanical engineering and was for many years with the Page Wire Fence Company at Monessen, Penna.; more recently he was at New Cumberstown, Ohio, and is believed to be in the iron and steel business; Professor Frank D. Clark, was graduated in electrical engineering and has taught in various schools in the United States, more recently at the University of Vermont and Municipal University of Akron, Ohio. Floyd Frazier was a member of Course IX and was at last accounts in the west. Malcolm H. McGann was a student in Courses VIII and X, and the last heard from him he was at Buchanan, Va. During the War and afterwards he was with the Emergency Fleet Corporation at Artega, Fla. James C. Russell is undoubtedly somewhere around Chicago as his previous addresses have always been in that city. Norman F. Rutherford was a graduate of Course VI. Attendants at our reunions will remember him as owning an estate at East Falmouth. He departed from that place nearly two years ago and his present whereabouts are unknown to the Secretary. Possibly some classmate may have run across him. If any one has any information to help locate these men, it will be most gratefully received by the Secretary. — CHARLES E. LOCKE, *Secretary*, Room 8-109, M. I. T., Cambridge, Mass. JOHN A. ROCKWELL, *Assistant Secretary*, 24 Garden Street, Cambridge, Mass.

1898

This is the year of the All-Technology Reunion which will be held on June 6 and 7. We know that former reunions have been wonderful occasions to get together with our own classmates and those of other classes and with the spirit of Technology. This coming Reunion promises all the spirit of fellowship of former ones and the program indicates some unique features. The first opportunity will be given the Alumni to welcome our newly chosen President, Dr. Karl T. Compton. With all the attractions of the General Reunion it does not seem desirable to stage a special '98 outing in the country. Friday evening, June 6, has been set aside for class dinners and '98 will then get a chance to get its own members together to consider their own intimate relationships.

George Anthony is now located at Wellesley, Mass., where he has become a member of the Faculty of Babson Institute. — Arthur Blanchard has been giving lectures at Harvard the past winter to fill in a gap caused by the sudden resignation of one of the Harvard staff. — Seth Humphrey starts in a few weeks for a summer's "Loafing through England."

Paul F. Johnson writes the following from Altadena, Calif.: "Really, Arthur, it is too bad that '98 does not get into the Class Notes in The Review once in a while. I cannot tell you much, as I have not seen a classmate in years, not even Frank Coombs, who attended the Thirty Year Reunion, which I did not. I did quite a lot of cruising in my power yacht *Seyelen* last summer, visiting all except one of the islands off the southern Californian coast, and to Santa Barbara twice. Last April I ran in the long distance ocean race (over 400 statute miles) from Los Angeles to San Francisco. It was a handicap affair under the past performance rules of the American Power Boat Association. I had only one competitor, a seventy foot boat with 400 h.p. motors. *Seyelyn* is eighty-two feet with 350 h.p. I chose an engine speed that gave 10.9 knots, which I figured I could easily carry against the usually heavy seas in the northern two-thirds of the course. My competitor, though claiming that he could make twenty-five miles an hour, chose a speed of ten knots. We started together from Los Angeles and of course I reached Santa Barbara first, but I did not save my time by about five minutes. The next afternoon about three o'clock I left Santa Barbara for the 200 nautical mile run to Monterey. The *Zoa* left about three hours sooner on her handicap. I did not catch sight of her till the next morning, then gradually overhauled her and came into Monterey only a few seconds behind. Instead of the usual rough seas on this run it had been smooth with only a moderate swell. So the smaller boat got another lucky break. The final run of ninety miles was run the same way, with an early start and a spectacular finish in the Golden Gate at 1 P.M. I lost that long ocean race by four seconds. It was a smoother cruise than our usual afternoon run to Catalina, till crossing the bar at San Francisco, where entering by the south channel we ran broadside to the heavy seas just outside the breakers. There we got good and wet.

"I had a paid crew of three, engineer, deckhand, and cook, being of course my own captain and navigator. My daughter and her husband made up the rest. They had to come back by train and after a little over a week in San Francisco Bay, I brought the yacht back at cruising speed, making the run down in twenty-seven and one-half hours without stops. It was plenty rough this time, but the following seas pushed us right along, increasing our speed to thirteen knots, till we reached the shelter of Point Conception.

"The race will be held again this year with probably more entrants, and now that I know something about the coast up that way and something about racing, I expect to enter with a fair chance of winning. In this sort of a race we are not allowed to speed up our engines above the specified figure, which in my case last year was 1260 for the engines and half that for the propellors. After that I plan to go on up to Seattle on the yacht with whatever yachtsmen I can pick up for the cruise. My wife will drive up with a friend as she does not care for rough water. We will cruise around Puget Sound and perhaps on to Alaska, spending the whole summer. That is my dream that I hope will come true." — ARTHUR A. BLANCHARD, *Secretary*, Room 4-160, M. I. T., Cambridge, Mass.

1899

Tommy Lennan writes me from Joplin, Mo., that he missed me at the dinner of the American Institute of Mining Engineers in February because he got his dates mixed and arrived twenty-four hours late. He regrets it. So do I. He also writes that he is making plans to attend the All-Technology Reunion in June and that he has told Norman Rood to have all his horse show dates caught up so he can go to the Reunion, too. Tommy wants to be counted in on everything that is going on. The years have not changed Tommy for which fact Tommy's friends are more than grateful.

Churchill reiterates his invitation to all and sundry of the Class to stop at Berea and see them. Such a visit is a treat to the visitor. I speak with authority for I have been there. He reports further that his children are vibrating between tears and anger because their teacher has been stolen from them and has been installed as teacher in the new school house erected recently under President Hoover's direction not far from his summer camp.

Burt Rickards, director of the Division of Public Health Education of the State of New York, writes that he has been appointed vice-chairman for Albany of the 1930 All-Technology Reunion. By

1899 Continued

this token I am expecting Burt to be present at that time. Burt has been appointed representative-at-large on the Alumni Council for a two year term commencing July 1 of this year. I have been notified that I, too, was appointed on the same Council.

Rickards reports that until a few years ago no graduates of the Albany Academy had gone to Technology, but interest was stimulated by the Technology Club of Albany so that one student registered in 1928, two registered in 1929, and four will register in 1930. The Club arranged with President Stratton to send a representative of the Institute to Albany to address the boys at the Academy on the value of a technical education. This year the address was delivered by Professor James L. Tryon. His talk aroused so much interest that in addition to the four who are registering for 1930 entrance, eight boys in lower classes have shown a decided interest in Technology. The Albany idea might well be followed by other Technology clubs.

News has come to my desk of the marriage of Herbert H. Riddle in January, 1930, in Chicago, to Miss Martha Brown McGuire, graduate of Smith College in 1917. Riddle is the designer of the Mather Tower, and the Chicago Theological Seminary group.

My last appeal of February 10 was obeyed literally. Several members of '99 informed me not about themselves, but about a friend. Unfortunately it was the same friend — classmate Stebbins of Tessancourt, France. More unfortunate the fact that I had been told earlier of Stebbins's *Closerie des Saules*, and had reported his whereabouts last month. But I was gratified to receive the duplicate information as it confirmed my belief that we as a Class still follow the news of the day. We read news about each other avidly, but as makers of news we are a modest group. The July column is before us and your Secretary has nothing to put into it. The Moors say that he who has daughters has troubles, but the troubles of a man with daughters are as nothing to the troubles of a man with a news column and nothing to put into it. Unless the members act in self defense, the Secretary and the Assistant Secretary will tell you all about themselves. The warning has gone forth. On your own heads be it. — W. MALCOLM CORSE, *Secretary*, 810 Eighteenth Street, Washington, D. C. ARTHUR H. BROWN, *Assistant Secretary*, 53 State Street, Boston, Mass.

1900

Batcheller from way off in Oregon wishes us the best of luck on our party in June and regrets very much that he cannot get away in June. He expects to be in Boston in September.

From Concord, N. H., Frederick E. Everett, State Highway Commissioner, and Mrs. Everett announce the engagement of their daughter, Miss Barbara Everett, Wellesley '29, to Sidney C. Hayward, Dartmouth '26, of Hanover, N. H., who was recently appointed to succeed the late Professor Eugene F. Clark as Secretary of the College. Mr. Hayward and Miss Everett's brother, Douglas Everett, were classmates at Dartmouth, where Hayward managed the varsity hockey team of which Everett was captain.

Allen sends in word that up to March 22 about ninety-five replies had been received from members of the Class on the forms sent out and that over forty signified their intention of attending the Thirty Year Reunion to be held at Oyster Harbors Club at Osterville on the Cape on June 4 and 5 next. This bids fair to be the best reunion we have ever had and any member still on the fence about coming should by all means decide to take two or three days off to meet the old friends of other days. It is not too late to send in your acceptance and you will never regret it.

The revision of the Class Book is well under way and will undoubtedly be ready for distribution at the Class Reunion. Provision will be made for delivery to those not attending the Reunion and who would like a copy. The price will be actual cost. — C. BURTON COTTING, *Secretary*, 111 Devonshire Street, Boston, Mass.

1901

Jack Eveland has just checked in from New York after about a year in Buenos Aires. The Dwight Robinson Company which has enjoyed the benefit of Jack's services has built fifty-odd blocks of subway in as many weeks. He has returned to New York to refresh and recuperate himself. Those yearning for lurid tales of life under the Southern Cross — very different from the one we bear — can find Jack at 63 Twenty-Seventh Street, Jackson Heights, New York. Jack writes that he will be glad to see any Technology men and particularly those of the Class of '01.

Charlie Auer has completed his intelligence work and as a result I can check up on the Madeiro family. At the time that the boys were in college with us the family was one of the richest in Mexico but the vicissitudes of the past few years have brought sweeping changes. Salvador and Alberto are the older generation and they were uncles of Alfonso, Emilio, Benjamin, and Julio, all of whom were at Technology, and also of Francisco, the late President. Salvador is the only who has not actively participated in the political troubles of the past twenty years. He is engaged in mining marble at Mapimi, but lives in San Pedro and Parras in Coahuila. Emilio is in business in Monterey, Alberto in Chihuahua, and Alfonso in El Paso, which is also Charlie Auer's headquarters. An interesting personal touch in the following episode which Charlie relates: "Since you mentioned Julio, I want to state that he crossed the frontier at Eagle Pass, Texas, on July 1, 1913, and came to our place, namely, Velardena, Durango, on July 13, with the late President V. Carranza when Carranza was trying to head for Mexico City and become President. I took Julio and a friend of his into my quarters and allowed them to wash up a bit and while surveying them, I asked them if my surroundings differed at all from those of Technology and dear old Boston. It gave them a good laugh, the first they had had in weeks for they arrived at our place on the run as they had been defeated, licked, and put to the road to save their skins." Alfonso, by the way, was a general in the recent Escobar Revolution.

Charlie himself is a major in the Chemical Warfare Service Reserve and is about due for promotion in the not far distant future. His principal claim to fame, however, at the present moment is one husky grandson, aged one year, and able to curse fluently in both English and Spanish. Said grandson is already earmarked for Technology, so in a matter of seventeen or eighteen years I look forward to the arrival of a young friend who will be able to give me the lowdown on a Spanish omelette. This is an article of food to which I am addicted and for which, Charlie assures me, the boy has already developed some appreciation.

I have recently heard from another Charlie; this time Charlie Campbell, who at the present time is directing the work of the Detroit League for the Handicapped. Charlie is one of the few men in the Class who is following directly in the line of his father and this is perhaps the more remarkable in that it represents a highly specialized and vitally important field of activity. His father, Sir Francis, for many years was an active and potent force in the teaching and aiding of the blind. Charlie started his own work in this field after leaving Technology and has made a fine record of achievement of help to this sorely afflicted group. He participated actively in rehabilitation work both during and after the War and his present activity is but one of the many organizations which have enjoyed his constructive direction. Charlie says regretfully that he will not sit in at the Reunion because he has hayfever. My suggestion to him would be to kill two birds with one stone, come on for the Reunion, and be desensitized to his own particular brands of pollen. I offer this as a suggestion.

This is of necessity a brief letter as I am on the eve of departure for Chicago where I shall foregather with Phil Moore and I trust others of the Class. In my next letter I will give you a carefully edited account of my visit to the Lake Shore, assuming that I survive it. While the years have treated me kindly, the pretty girlish figure is only a reminiscence, and I should present an ample target for any moderately skillful gunman particularly if a machine gun were his favorite agent of homicide.

Before concluding let me remind you once more that we are to have a five year celebration in early June of this year and that you will miss a great deal if you do not attend it. An added feature of great interest lies in the inauguration of our present Dr. Stratton as Chairman of the Executive Committee of the Corporation and of Dr. Compton who fills the place made vacant by Dr. Stratton's promotion.

1901 Continued

Parenthetically, let me comment with bitterness on the small number of responses which have reached me relative to personal participation. Dip the old fountain pen in some one else's inkwell and let me know that you are coming in order that the fattening calf may be properly embellished. — ALLAN WINTER ROWE, *Secretary*, 4 Newbury Street, Boston, Mass. V. FRANK HOLMES, *Assistant Secretary*, 250 Stuart Street, Boston, Mass.

1902

Harold Bosworth writes that he is coming on for the All-Technology Reunion next June bringing Mrs. Bosworth and his younger son Richard. He is planning the trip to take in the graduation of his older son, Otis, who is a senior at Princeton.

The younger generation is coming on. Belvin Williston and Robert Reynolds are in the senior class at Technology and Adrian Sawyer's daughter, Florence, was pictured in the Boston papers recently as taking a leading part in dramatics at Wellesley.

Several classmates have already signified their intention of being on hand for the Class Outing at the Riversea Inn, Saybrook, Conn., on June 13 to 15. We trust that all classmates coming from a distance will note these dates and, if possible, arrange their trips to take in both the General Reunion in Boston and the Outing five days later. — FREDERICK H. HUNTER, *Secretary*, Box 11, West Roxbury, Mass. BURTON G. PHILBRICK, *Assistant Secretary*, 246 Stuart Street, Boston, Mass.

1904

The biggest item to be included in these notes is an account of the Mid-Winter Reunion of the Class which was held at the University Club on February 27, with eighteen true and faithful classmates gathered around the festive board. After dinner the matter of the coming All-Technology Reunion and our own Annual Reunion were discussed and tentative plans were formed which will be mentioned at the close of these notes.

The entertainment for the evening was furnished by the official motion picture photographer of the class, Tammy Rockwood, and the great European traveler, Mert Emerson. First, we were shown the moving pictures which were taken at the Twenty-Fifth Anniversary, which were very entertaining and are a valuable record of that event. Then Tammy showed us the pictures which he took on his trip two years ago when he went to the Pacific Coast. These pictures were very good and we all feel that we have a real motion picture photographer in our ranks. He also showed us a few pictures taken in color and some taken in New Orleans this past winter while he was there on a short trip. After these pictures had been shown, Mert Emerson exhibited some still pictures which he took at the Twenty-Fifth. They were very good except that Mert showed a fatal tendency to clip the heads from all the subjects. He could give no reason why he had done this. The balance of the pictures were most interesting. He also showed some views which he took on his recent trip to Europe. The pictures were interesting but Mert as a lecturer was a flop.

Jack Draper has been spending the winter at a place in Florida which bears the euphonious title of Eau Gallie, and I wrote him a letter at the dinner table which was signed by all present, to which Jack made the following reply: "We just got back from a trip over to the west coast of the state and found that letter written by you and signed by the best bunch of fellows I know of. It is one of the best letters I have ever received and I do mightily appreciate the thoughtfulness and the good wishes. For just a few minutes after reading it I felt as my little 'cracker' newspaper boy expresses it, 'all stove up.' Do tell any of the bunch you see that I am getting along in great shape. Just got a few more kinks to straighten out and I will be all ready for another race with Humph. You know Humph and I have been going to have another running race ever since our Class Reunion at the Vesper Country Club. Humph wrote me a corking note at the time of our Twenty-Fifth, and I wrote back with a challenge for a race sure in June, 1930. How about it, Steve? Is there to be a reunion this June?" Jack has been in rather poor health for some time and we are all very glad to know that he is staging a comeback and is feeling like himself again.

Those present at the dinner were: Cunningham, Dennie, C. J. Emerson, M. L. Emerson, Ferris, Haley, Hartshorne, Homer, Moore, Munster, Parker, Rockwood, Gene Russell, Stebbins, Sutton, Phil Sweetser, Hayward, and your Secretary. Also present in spirit was Dan Comstock as evidenced by a telegram sent to us from Providence while he was *en route* to New York.

We all remember that Volts Ovington was one of the very early successful aviators, and a clipping from Los Angeles, under the date of Fegruary 13, reveals the fact that he has been signally honored for his early connection with flying. "Earle Ovington, pioneer aviator who flew the first air mail from Nassau to Mineola, N. Y., a distance of six miles, today became President of aviation's unique organization, the Early Birds — fliers who won their aerial spurs prior to December, 1916. He succeeds P. G. B. Morriss of New York."

Those of you who attend moving pictures with more or less regularity have been much interested in the growth of the use of Technicolor, which we all know is the invention and product of our classmates, Herb Kalmus and Dan Comstock. There have been a number of items in the press recently regarding Technicolor which indicates that Technicolor, Inc., is rapidly forging to the front. A recent newspaper clipping states that the earnings of Technicolor, Inc., for the year ending December 31, 1929, have shown a tremendous increase, the Corporation having been able to wipe out previous deficits and indebtedness and show a net profit of well over $1,000,000. "The tremendous gain in earnings last year was caused by the markedly increased popularity of color films. Technicolor controls the secret and patented process for the reproduction of natural color in motion pictures which is now used by such leading film producers as Paramount, Warner Brothers, First National, Metro-Goldwyn-Mayer, Radio-Keith-Orpheum, United Artists, Universal, and Tiffany. Technicolor has signed up a young French artist, André Durenceau, whose work has appeared on the covers of American magazines in recent years. M. Durenceau is now in Hollywood. He joins the color direction department, working under the supervision of Natalie M. Kalmus, pioneer color director of motion pictures. Mrs. Kalmus supervised color scenes in 'The Rogue Song,' 'The Vagabond King,' 'Sally,' and several other recent Technicolor productions."

Some time ago I recorded the fact that Charlie Haynes had been transferred from the New Haven offices of the United States Rubber Company to the Malden plants, but those plants have now been closed and Charlie is now located at Naugatuck, Conn. The minutes of the 143d meeting of the Alumni Council contains the statement that he is to represent the Technology Club of Oslo, Norway, on the Alumni Council.

Another member of our Class has been signally honored in being nominated as one of the candidates for election as Term Member of the Corporation. This is none other than Selskar Gunn, as you are all probably aware due to the ballots which have been sent to all members of the Alumni Association. As these notes are written on March 25 it is too early to know whether or not he has been elected, but we are all very certain that, should he be elected, he will be a worthy addition to the Corporation. His record as Vice-President of the Rockefeller Foundation has been outstanding and he is one of the leading men of the world in public health research.

Harry Rollins was in Boston on March 8 and called me up to tell me that he and Mrs. Rollins were sailing the next day on a trip through the Mediterranean. He expects to be back about May 1 and hopes to attend the Annual Reunion this year.

Another of our friends who is classified as '05 who has passed into the great beyond is Charles Saville, who died in Dallas, Texas, on Saturday, February 15, 1930. He was in our Class for several years during our Institute life but received his degree in the Sanitary and Municipal Engineering Course in 1906. Later he took Public Health Option in the Biology Course. For several years previous to his death he was engaged in the insurance business in Dallas and was general manager of the Chamber of Commerce of that city.

At the dinner held on February 27 it was decided that the Class would hold a Class Dinner at the Brae Burn Country Club in West Newton on Friday, June 6, at 6:30 P.M., at which all the ladies of the Class will be welcome. The Annual Reunion of the Class will be held at East Bay Lodge, Osterville, Mass., on

1904 Continued

June 27, 28 and 29. If details of these events have not already reached you, they will be in your hands very shortly and I hope that the Class will attend in good numbers. — HENRY W. STEVENS, *Secretary*, 12 Garrison Street, Chestnut Hill, Mass. AMASA M. HOLCOMBE, *Assistant Secretary*, 3305 Eighteenth Street, N. W., Washington, D. C.

1905

Gentlemen, Max Cline. "It must ruffle the temper of the best natured Class Secretary to have to yank information from a mulish mate; and your temper may not be of the best. The sweetest disposition may be soured by the vicissitudes and weathering of a quarter century or more of New England life. On second thought I withdraw the apology. I am beginning to remember that about the time you sent out your first line to me, you published in The Review that you had dropped into Glens Falls to see Bill Green and that when you learned that the verdant Bill was absent, Glens Falls became dismal, arid, and friendless. I have forgotten whether you mentioned that you had to run up to Montreal or down to Saratoga for consolation.

"Had you tried to dig me out, you might have got anything from a bunch of gossip to an inspection of the family album; thereby saving me and the stenographer from writer's cramp, a most dreaded and fearsome disease to technical men. But then, why bemoan cruel fate? The burden has to be borne and the work must go on.

"I still have the same wife who was given honorable mention in The Review at a date which the wife objects to publicly mention and recall. She deserves a lot of credit for having stood for me and by me all these years. Of the two boys already mentioned to a breathless multitude of Technology men, one is now a junior at Cornell. He must have cast a jaundiced eye at his father's profession and not found it the 'cat's whiskers.' He must consider that it is easier to become President of the United States by being a lawyer now that competition from generals has shrunk. The second boy believes that he will graduate from high school this June. He talks of taking up his father's profession. He has not expressed it, but I believe that he thinks that what is wrong with the old man's profession is not the profession but the old man.

"I really don't know what you want for the *pièce de résistance*. Back in 1910 I was chief chemist in a modest little Bureau which was supposed to do all the technical work for a $60,000,000 corporation called the International Paper Company. The title was more impressive in name than in reality. As I recall it, I had two assistants and one helper. Since then the Bureau has had a modest growth. Starting in 1924 a bunch of Boston men have pulled the old International Paper Company up by the roots, have molded and built, up to the point where they have put a Power in the name and an annual statement that requires the combined intelligence of a mathematician, an accountant, and a lawyer for its digestion. They have been too busy till now to pay an appreciable amount of attention to the technical development. I understand that they are ready to start in on this task, reinforced by men who have replaced those fallen by the wayside. The next time you hear from me, I may report that I am section chief Z of division Y of the I.P.P. Company."

An '05 dinner was held at Walker Memorial on Friday, February 28, and during the powwow, your Secretary was able to collect some items of interest. Theodore Dissel has sold the Cameron Appliance Company of Everett, manufacturers of various little galvanized gadgets and has recently been straightening out a concern in Waltham making safety treads. He continues to live in Winchester which must be about equally accessible to both points.

Sid Caine, who joined the Episcopal ministry a few years after graduation and who has been located for some years at a church outside of Philadelphia, has recently become rector of the Church of the Advent, Brimmer Street, Boston. — Gilbert Tower took up fire insurance after quitting the Navy, later branching into general insurance. He is now giving most of his time to life insurance in Boston and his home town, Cohasset. — Blakeman is the other product of Course XIII who is following in Charlie Johnson's footsteps.

Myron Helpern and the Touraine Glove Company have had a successful business in Boston, starting with one small store on Washington Street, to which were added several others. Some years ago Sid Strickland was engaged to beautify these stores with the result that people stayed and bought more and Myron made a clean-up. Now he has invaded New York and Sid has fixed him up a most attractive atelier at Fifth Avenue and Forty-Fourth Street.

Harry Wentworth seems to have given up his Canadian territory for report has him prospecting in Texas, or is it Mexico? — We had supposed that Fred Poole was in some kind of electrical work but he confided that it has for some time been merchandising engineering which sounds a lot like Ray Bell. Periodically, or thereabouts, we continue to receive Ray's monographs, in loose leaf form.

Grafton Perkins, who is still keeping that schoolgirl complexion (excuse it please, it's the other one up in Cambridge), writes that "my older boy is almost as tall and heavy (?) as I, and is boning hard for entrance exams to Annapolis. It makes me realize that old age is creeping on!" Our Twenty-Fifth Reunion is in June. — Joseph Dwight, who has had several addresses lately, was finally located at 90 Ivy Street, Brookline, Mass.

According to its annual report, the Western Electric Company Sound System for talking motion pictures was installed, during the year, in more than 3,000 theatres, the number in operation at the end of the year being approximately 4,400, of which 1,100 were in theatres abroad, distributed in thirty-six countries throughout the world. The report states that about 90% of all the talking motion pictures are being reproduced on Western Electric apparatus. Small wonder that Herb Wilcox finds it necessary to make frequent trips across and around the country. It seems strange that, to date, he has gotten only as far as Alaska. Unencumbered with children, no doubt he will soon find it necessary to look over the 1,100 in the thirty-six countries. Why not?

John Damon's engagement to Miss Rachel Myrick of Brookline was announced on March 2. They are to be married on Tuesday, April 15, and will live at 60 Rokeby Road, Waban, Mass. — Bertrand Johnson's annual on tin seems to have been abandoned. His current publication is "Phosphate Rock in 1928" issued by the Department of Commerce, Bureau of Mines. — The rebuilt S. S. *Constitution* (Old Ironsides) went overboard at the Charlestown Navy Yard on March 15. The work of reconditioning, paid for by the school children, was under the direction of Captain Clayton M. Simmers, C. C., U. S. N.

Charles Saville died in Dallas, Texas, on February 15. Charlie started with '04, but due to two serious illnesses became '05 and finally finished with '06. He took sanitary engineering and after graduation spent some time in Germany with Dr. Imhoff, the leading authority then on sewage disposal. For several years he was a member of a firm of sanitary engineers in New York. In 1916 he went to Dallas as director of public health, and from 1918 to 1926 was manager of the Chamber of Commerce. Since 1926 he has been special agent of the Union Central Life Insurance Company. He leaves a wife and six children, five girls and a boy. — ROSWELL DAVIS, *Secretary*, West Station, Middletown, Conn. SIDNEY T. STRICKLAND, *Assistant Secretary*, 20 Newbury Street, Boston, Mass.

1907

Dick Ashenden is now the President and Treasurer of L. L. Rowe Company, a firm which manufactures tumbler washing machines and chocolate urns for use in restaurants, soda fountains, and so on, and which is located at 74 Portland Street, Boston. The firm enjoys a high and national reputation and does a fine business. Dick has a son who is a junior at Technology now.

We meet Walter Bigelow frequently in Boston. He is a member of the engineering firm, Bigelow and Tirrell, at 333 Washington Street, Boston, doing a general engineering business. We also see Bert Kendall every now and then. Bert is a member of the firm of architects, Kendall, Taylor and Company, which specializes in hospital design, and they have done the work for many of the largest and most modern hospitals in the country. The company office is at 142 Berkeley Street, Boston.

Not long ago Edward G. Lee accosted me in the corridor of the Chamber of Commerce Building in Boston. He is an

1907 Continued

hydraulic engineer for the New England Power Company at 89 Broad Street, Boston.

John Frank wrote me a letter recently suggesting that a questionnaire be sent out to all '07 men seeking information so that our class column in The Review may be more interesting. We are planning to get busy on this idea soon, and we ask your coöperation. But it is not necessary to wait for this. Send along to your Secretary now the up to date news about yourself or other classmates. — BRYANT NICHOLS, *Secretary*, 2 Rowe Street, Auburndale, Mass. HAROLD S. WONSON, *Assistant Secretary*, Int. Shoe Company, Manchester, N. H.

1908

The third Class Dinner of the 1929–30 season will be held on Tuesday, May 13, at 6:30 P.M., at Walker Memorial, Cambridge. Alton Cook, chairman of the committee in charge of our part in the All-Technology Reunion this June, reports that plans are well under way for the dinner dance which the Class is to hold on Friday evening, June 6. This will be held at one of the clubs in the suburbs, a short drive from Boston. Full details will be available at the dinner, and, of course, full information will be mailed to all members of the Class in plenty of time so that plans can be made by those who are away from Boston.

A. H. Bradford, general superintendent for Pacific-American Fisheries, reports the discovery of a vein of silver-lead-zinc-copper ore on Popoff Island, of the Shumagin group, western Alaska. The vein has been traced for 600 feet and is reported to average $16 in all metals per ton.

Karl Kennison, who has become an authority on airport design and construction, is building the new airport at Norwood, Mass. When completed, it will be the greatest airport in New England.

Professor Locke recently sent us a very interesting letter received from H. P. Sweeny, who is general manager for the Rhodesian Vanadium Corporation, Salisbury, South Rhodesia. His description of the climate and customs is most interesting, especially as regards the viewpoint of the natives. Apparently it agrees with him, however, from the following quotation: "Don't assume from this that I do not like the country. I love it. The climate is delightful: cool nights and hot days, months of cloudless skies, and sunsets that are simply indescribable." — HAROLD L. CARTER, *Secretary*, 185 Franklin Street, Boston, Mass. LINCOLN MAYO, *Treasurer*, 842 Commonwealth Avenue, Boston, Mass.

1909

By the time you receive this issue of The Review you have undoubtedly made your plans to attend the All-Technology Reunion in Cambridge on June 6 and 7. Friday evening has been set aside fo class dinners. Plans for the '09 Dinner have been completed, and we take pleasure in announcing that the dinner will be held at the Sheraton on Bay State Road. Ladies are invited to the dinner which will be followed by a bridge party. Special arrangements have been made for Jim Finnie and the gang.

The Sheraton is conveniently located, near the Boston end of Harvard Bridge, and is only a few minutes' walk from the Institute. The management of the hotel has kindly offered us the use of a suite of rooms on the first floor, where members of the Class, their wives, and guests, may make their headquarters during the day. For those of our Class coming from out of town the Sheraton would be an ideal place at which to stay, and we would suggest that you make your reservations early, as one of the other classes is planning to hold its dinner at the Sheraton on Friday evening and undoubtedly will make the hotel its headquarters also. Address your inquiries to the Sheraton, 91 Bay State Road, Boston, to the attention of Mr. George R. Sanford, manager. If you mention that you are a member of the Class of '09 you will be well taken care of.

Madge Spencer, wife of Henry Spencer, has been elected to the School Committee of Winchester, Mass. — George Bowers recently suffered the loss of his father on February 28, who was graduated from Technology in 1875 and who was formerly city engineer of Lowell, Mass. — CHARLES R. MAIN, *Secretary*, 201 Devonshire Street, Boston, Mass. PAUL M. WISWALL, *Assistant Secretary*, The Postum Company, 250 Park Avenue, New York, N. Y.

1910

Material is going out shortly, which you will have received before these notes appear, giving information on the '10 Class Dinner. This is to be held at the American House on June 6, at 6:30 P.M. Details will be included in the questionnaire giving more about the Reunion.

Note particularly the address your Secretary is using for receiving material for the Class Notes. It is his business address. — DUDLEY CLAPP, *Secretary*, 40 Water Street, East Cambridge, Mass.

1911

When these notes appear we will be on the eve of the Five Year All-Technology Reunion and of course the important thing to know will be the data concerning the gathering of the clan of '11. It will be an informal stag dinner in Room 406 and 407 of the University Club, Boston, at 6:30 P.M., Friday evening, June 6. Elsewhere in this issue you will find details of the entertainment for the ladies for that evening, so if your wife is along, attendance at our class function leaves you with an entirely clear conscience. Maybe it won't be so clear when you leave the class function, but by all means plan to attend.

I had a nice letter from Harry Tisdale V, who is with the American Dyewood Company of New York, operating from Schenectady. Last year he was laid up for nearly two months in the late summer with a form of arthritis, which cut out plans he and Mrs. Tisdale had for a camping trip up in the Adirondacks, but they hope to make up for lost time this summer. Harry says he'll start the fun on April 1 if he can get anywhere near the brooks then. He called my attention to an error in the March Class Notes. I referred to our Class Reunion in 1931 as our Fifteenth when of course we all realize that it will be our Twentieth Class Reunion in 1931. Harry suggests the Lake Placid Club. Where do you suggest we have it?

Harry Lake I, we learn from the Alumni Office, is no longer in New York City, but is now at 544 Commonwealth Avenue, Boston. I haven't had a chance to look him up yet nor has he written — hence this bare announcement. — I had occasion to check up on class statistics recently and I find we have more than eighty classmates with no known address. When you receive your copy of the "Register of Former Students," which, of course, you have applied for, run through the '11 list and see if you can't enlighten us on some of their whereabouts. Where, for example, are E. E. Besse II, W. J. Buckley I, M. W. Hopkins I, E. A. Nash I, and W. A. Shepherd VI, all formerly active in class affairs?

Mike Greenleaf VI, who operates a highly successful electric service business under the name of Greenleaf, Inc., at 3127 East Jefferson Avenue, Detroit, Mich., reports increasing business and recently we received a copy of his latest piece of publicity which was most ingenious and effective. Mike advertises his service as "engineered service" and specializes in carburetor, ignition, generator, magneto, starter, speedometer, and kindred services. More power to you, old timer!

Well, mates, I hope to see a lot of you on June 6 at the '11 Class Dinner and also for the two days of the Reunion. Make your plans now to attend our Twenty Year Reunion in 1931. Details will follow. — ORVILLE B. DENISON, *Secretary*, 32 Reed Street, Lexington, Mass. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford, Mass.

1912

A tip for the stock ticker followers: watch "Lambert" on the Big Board. Read this letter from Bill Bird and let your conscience be your guide. "The Lambert Company, manufacturers of Listerine and other products, took over as of February 19, the Prophylactic Brush Company on an exchange of stock basis. This company will be run entirely separate from the Lambert Company and I have been put in charge of the Brush Company with the title of Vice-President and General Manager. At present I am still making headquarters in New York at the office of the Lambert Company and I am there Saturdays and Mondays. The rest of the week, however, I spend here in Florence, Mass., which is part of Northampton. And I will eventually live here. The Prophylactic Brush Company manufactures tooth brushes as well as different kinds of hair brushes and others. We also operate a Canadian subsidiary." Best wishes, Bill. We make no

1912 Continued

charge for the above advertisement, but we could use four new tooth brushes, two adult size and two for tiny tots.

Under local yachting notes I find that W. T. Roberts has just purchased the forty-seven foot A. C. F. cabin cruiser, *Llewellyn*, and will cruise out of Hingham this summer.

I was very glad indeed to receive a good letter from B. H. Morash VI which follows: "As you know I spent two years in England looking after the Kelvinator interests, but last September I was brought back to Detroit to meander around the world for the same company to organize Kelvinator sales companies. The prospect did not altogether appeal to me, being a contented married man with one infant and a wife, so I stalled, and did some special work in Canada for Kelvinator of Canada, Ltd., but I finally was persuaded to take a short trip to Japan, my old stamping grounds, where a century or so ago I used to be connected with the General Electric Company. I saw Dave McGrath in New York and had him arrange for the Association to send me the names of all the Technology men in Japan. I saw our old friend Harold Brackett in New York and we spent an evening together. He keeps climbing upwards in that mathematical telephone game which would make me dizzy.

"Together with my family we started off from Detroit on December 14, spending a few days in Los Angeles and San Francisco. I hope to be able to retire to that land of sunshine and bliss some day. We boarded the Dollar Line S.S. *Taft* on December 20 and had a splendid day in Honolulu the day after Christmas. That is a spot I highly recommend to any of you for a fine vacation. We had a great trip across, even if the boat was practically dry, and arrived here January 6. The weather has been magnificent. One can hardly appreciate the great strides the Japanese have made in the last ten years, and especially since the earthquake in 1923. Tokio and Yokohama are very modern cities with wide and well paved, American type streets. A great many splendid office buildings dot these cities. Living is very expensive. Labor and salaries have mounted skyward since the War, whereas living costs have gone down in most countries since the War.

"I have closed a good deal of Kelvinator distribution and am training the organization. I shall make some trips to the important centers including Korea and Manchuria, and perhaps I shall touch at Tientsin before I return to the States about May. My movements thereafter are uncertain, although I have one or two bees in my bonnet.

"Kindest regards to everybody. If you come to Japan before May look me up, but don't do like Bob Wiseman. After he had been in England a couple of months he wrote me a letter for a get-together, but I had sailed and the letter reached me in Detroit. Since your December notes I see he was in Norway, so perhaps my impression was wrong. By the way, the World Engineering Congress held in Japan had closed just before I arrived, so I missed that very great pleasure of having a chat with our old friend Dugald and Professor Richards."

We are looking for a good '12 turnout for the Five Year Reunion. Come on and let's get acquainted. It has been a long time since we have seen one another. — FREDERICK J. SHEPARD, JR., *Secretary*, 125 Walnut Street, Watertown, Mass. DAVID J. MCGRATH, *Assistant Secretary*, McGraw Hill Publishing Company, Inc., Tenth Avenue and 36th Street, New York, N. Y.

1914

In writing up the last notes, your Secretary erroneously omitted the name of R. A. Trufant as one of those attending the Annual Technology Dinner in Boston. Your Secretary humbly apologizes for this error, and to make up for it, urges every '14 man to eat more cranberries, thus making our Cranberry King Trufant more prosperous.

No further issues of The Technology Review will appear until after the June Reunion. This is, therefore, the last appeal to you to attend the Reunion. The information sent out from Alumni headquarters should have convinced you of the advisability of coming to Cambridge. If, however, this is not sufficient, just remember that '14 is going to hold a grand dinner the night of June 6. You can't afford to miss it.

It is with great pleasure that we announce as a special attraction for this dinner that we have been able to secure the services of Professor Dean Abner Fales to dissertate on his observations while in Florida. It was originally planned to include them in these notes, but The Review Editors censored them most completely, therefore the report will be made in person by the honorable professor himself.

Welton A. Snow, who for several years has been city manager of Miami, no longer holds that important position. Snow, being an engineer and therefore believing in honesty and uprightness, refused to permit the continuation of many activities in that already famous City of Miami. It is understood that because of failure to give in to these various sinister influences, Snow was removed. We are all proud that a '14 man stood up in his shoes, and did not fall into the way of temptation. We already understand that several other cities have made overtures to Snow to come to them as city manager.

As there will be no June issue of The Review, your Secretary bids you goodby until June 6. — HAROLD B. RICHMOND, *Secretary*, 30 Swan Road, Winchester, Mass. — GEORGE K. PERLEY, *Assistant Secretary*, 21 Vista Way, Port Washington, N. Y.

1915

Here's the dope, fellows, on the Fifteenth Reunion. Because of his success in putting on such a great show for our Tenth, Frank Scully is the natural one to handle our Fifteenth, so he is taking charge of the plans. In fact, I am merely helping him. Fortunately for us the General Reunion comes this year so we can take in the major events of that with our own activities. By now you have probably received the preliminary descriptive notices from the general reunion committee and from our Class. Tentatively and generally, here are our plans. The S. S. *New York* of the Eastern Steamship Lines has been reserved for Thursday evening, June 5. When it leaves Pier 19, North River, New York, at 5 P.M. It would be a good idea for all men coming from outside New England and northern New York State to converge in New York and come over on that boat. You will have no difficulty in securing last minute reservations. Upon arrival in Boston on Friday morning, June 6, buses will meet the boat or you can take a cab to your hotel.

For our Class we recommend Hotel Kenmore in Kenmore Square, Boston. This is conveniently near the Massachusetts Avenue Bridge, the quickest route from Boston to the Institute. We suggest that the men in our Class do not register at any Boston hotels for we are going down to Marblehead, Mass., Friday afternoon for our own Reunion, where we shall stay at the Corinthian Yacht Club. Friday morning will be given over to Open House at the Institute. Headquarters for '15 will be in Room 5–130 where all our men can come and go. There will be fraternity luncheons at the different houses and a buffet lunch at Walker Memorial. The new President, Dr. Karl T. Compton, will be inaugurated Friday afternoon either at three or three-thirty, in a very short, informal service. After that, there will be a reception at Dr. Stratton's house, followed by crew races and speed boat trials on the River.

Then all down to Marblehead to our '15 Class Dinner at Corinthian. Class of '17 dines there that night, too, so we may resume friendly crap shooting relations with them. We are trying to arrange an early Saturday morning ball game with '17 before we motor up to Swampscott for the outing. Bring your gloves. We will furnish the bats and balls.

Saturday evening we are going into the banquet at the Statler (informal dress). Then back to Marblehead for a glorious time together. A word here about the ladies. Our Class Reunion is 100% stag, but Miss Gretchen Palmer '18, in charge of affairs for the ladies on the General Reunion, is arranging a banquet at the Statler Friday evening and a bridge Saturday at the New Ocean House for the ladies. Also for the ladies and for any men who may stay in Boston Friday evening there will be a special train from the North Station Saturday morning, definite departure to be announced later. Sunday at Marblehead we shall have golf, tennis, baseball, fishing, drinking, crap shooting, and other mild forms of respectable exercise. Frank is getting a speed boat for us, so there will be an extra thrill. George Rooney, Pirate himself, is our athletic committee. Give a guess! Bring your clubs, fishing tackle, racquets, gloves, dice, cameras, flasks, and bromo seltzer.

1915 Continued

We'll break up after Sunday night supper. The cost is going to be reasonably low. By arranging with your local railroad agent you may secure a special round trip rate of one and one-half fares. Ten dollars will cover Friday at the Institute (except lunch), the outing at Swampscott, and the banquet. For our own Reunion, including Class Dinner, Friday evening, room for Friday and Saturday nights at the Club, Saturday breakfast, all meals Sunday, all sports including fishing and racing in the speed boat, the charge will be about $20 per man. You must admit this is not hard to take for such a good time. The ladies' dinner on Friday evening is extra, of course, as that is outside the class affairs.

Just picture the sixty-two fellows who were at Cotuit for our Tenth and everybody come on for this. Let's make it 100 for our Fifteenth. Talk it up with your classmates who live near you or whom you contact with, either socially or in business. Everybody come. We should be justly proud of Laurie Geer who is now Secretary of the Alumni Association. This is a permanent position and brings Laurie back to Boston, where all the Class is glad to see him in his new position and wishes him lots of success.

Alton A. Cook V is now with the Dennison Manufacturing Company in Framingham, Mass. — Reggie Foster was recently admitted to the firm of Fred C. Church and Company as their insurance partner in Lowell, Mass. Congratulations Reg. — Clarence Howlett has left Kokomo, Ind., to work for the Converse Rubber Company in Malden, Mass.This adds to the strong Technology organization over there from our Class, Mitch Kaufman X being President, Max Woythaler V general manager, and Jac Sindler X technical director. Success to you, Clarence, in your new work.

I am trying to check up on some of the new addresses received from the Alumni Office. Charlie Hall I has moved from Great Neck, L. I., to 208 Eason Avenue, Detroit. Look up Gabe Hilton and Loring, and come on to the Reunion. — Bill Holway XI is now at 302 East 18th Street, Tulsa, Okla. Perhaps Mrs. Holway will let us know about his Russian experiences. — McCeney Werlich X is now at the Department of State in Washington, D. C. Please may we hear from you, Percy? — Is Benjamin H. Byrnes of Salina, Kans., the black haired Danny Byrnes from Lynn who used to play such a serious game of bridge around the old Union? — Douglas B. Baker VI has been transferred from Madrid, Spain, to London, and I think he is coming on for our Reunion. Tie that for a long distance prize, you boys living in the United States. See you at our Reunion. — AZEL W. MACK, *Secretary*, 377 Marlboro Street, Boston, Mass.

1916

Business is picking up! I was more or less discouraged with the response to my appeals for news last month, but this month I am pleased to hear from several of the boys — two of them even writing me of their own accord. I wish more would follow their example.

George Tuttle is now located in Buffalo with the du Pont Company, and writes as follows: "I am not given to autobiography, but your letter is too good not to be answered. If I go back nine years I think it will take care of that part of my existence which has not been covered heretofore. I came with the du Pont Rayon Company when they were just starting in business before any plants had been put in operation, in March, 1921. I started out with a good many others working in the plant setting up equipment and starting the operations. As time went on I was transferred to the power department, then to the chief engineers department, then back to the power department, and for the last two and one-half years I have been works engineer. In the meantime I was married to Marion Tompkins of Buffalo and we now have one daughter.

"The Technology Club of Buffalo has a real live President, Jim Brinkerhoff, and he has succeeded in pulling out some very good crowds for dinners. At the University Club on February 26, he had sixty at a real old-fashioned Technology dinner, but the '16 men were very scarce. I could not resist answering your letter, but in addition to that, the only reason why I am answering and giving you these few lines is in hopes that some of the boys will look me up, either at the plant or at home, as I should be mighty glad to see them."

Charlie Reed is in the Army still and is stationed at Washington. He says: "I have been on the point of writing to you each time I have read the Class Notes in The Review. I now step off into the writing. What has caused this desire is a just pride in one accomplishment which so far as I know has not been equalled by any other '16 man. Now hold on to everything. It's twins, both boys, Technology '47, Bobby and Billy. . . .

"Since graduation I have had but two jobs. First with the du Pont Company in Wilmington, Del., and then when the War started and ever since, with the Ordnance Department of the Army. Ever since I started with the du Pont Company, I have had a failing for ballistics. In 1918 I went to Panama to proof fire a sixteen inch gun and test a number of powder samples in the fourteen inch and sixteen inch guns there, working on both ends of the canal. I came back to Washington in the latter part of 1918 and continued in ammunition work till 1922, when I went out to Fort Sill, Okla., to take the battery officers course at the Field Artillery School. In June 1924, I was ordered to Picatiney Arsenal, Dover, N. J. We were there during the Lake Denmark naval disaster on July 10, 1926, leaving our house in a rain of shells. Fortunately none of my family was hurt seriously, though Bobbie had quite a cut over one eye caused by flying glass from one of the windows which was blown in. We stayed at Picatiney till August, 1927, and then came back to Washington where I took up my previous work in the ammunition division of the Ordnance Department.

"In 1920 I married Anita Swingle, a Washingtonian. Charles, Jr., was born here the following year and in 1925 we came back here long enough to get the twins. Once long ago I ran into Ralph Millis downtown, and recently a letter crossed my desk with his signature. He is stationed here, a Captain in the Engineer Corps, at the engineer reproduction plant. A few months ago I met Al Lieber quite unexpectedly at the Union Station. He, too, is an Army officer. I see Ralph Davies now and then, whenever he wants us to buy some aluminum.

"You said you were trying to make both ends meet in manufacturing golf balls. That's the first time I ever knew a golf ball had two ends. I'm not much on golf. I believe the game should have fewer and larger balls and more holes for them to sink into. It's so ridiculous having just eighteen holes in just acres and acres of ground."

Frank Hastie seems to be following in the footsteps of J. Rufus Wallingford. He is a promoter on his own statement: "After being in the Army from October 16, 1917, to September 12, 1928, I resigned as Captain, C. E., and am now at Collingwood Park, N. J., some day to be on the map as general factotum in building a town. We build something, I run it until business is built up on a paying basis, then we build something else, and so on. At present I am managing the garage. I am also doing some surveying on the side. News of Ed Clarkson would be appreciated. The last time I saw Ed was at my wedding in 1920 when in the excitement and stress of the occasion I almost fell off the side porch of the church when I was waiting in vain for the choir to sing 'Here comes the groom.' I was in more or less of a vacuum. I have often wondered whether Ken Sully ever married. In fact, I shall do my darnedest to be at the next reunion. Happy days to one and all in '16."

Duke Wellington writes as follows from the Laboratory of the New Haven Water Company in Connecticut: "About the time that you were writing your letter to me I had a brain wave that said I should write to you. The next thing was what to write, and that has had me guessing ever since. I can give you no news of any one from our Class as I have not seen any one since I was in New York about a year ago, and I believe Bill Farthing wrote you all about that. If any members of the Class do come to New Haven, they go right by without letting me know of their presence. I could give them a chance to go for a swim, if they came around on a nice hot day in the summer. You know it seems strange that with the live Technology Club we have here and the large number of industries both here and in Waterbury, that there are no '16 men around.

"As for myself, there is nothing new to write about. The family is just the same. My work still keeps me busy trying to furnish a bugless, tasteless, colorless,

1916 Continued

odorless water to New Haven and vicinity. We are just filling up a fifteen billion gallon reservoir. Anybody wanting to see one of the largest developments of this kind, just drop around. In my leisure I try conclusions with a sailboat with the élite of Long Island Sound. I believe you do the same at Marblehead."

Melville Rood is one of the few in the Class to stick to straight engineering. He advises: "As you probably know, I am still with Arthur D. Little here in Cambridge. We try to make the world better with better chemistry, *i.e.*, better application of the science to the industrial problems that are submitted to us. I rather hesitate to write anything of a personal nature for publication because the things that seem very important to us as individuals often look quite affected in print. However, here are my family statistics. We live in Arlington and have three youngsters, the oldest being a girl. Arlington has a fine community spirit and I find my time taken up with the Chamber of Commerce, Masons, and church activities. I am at present interested in a minstrel show. If any of the gang are near Kendall Square, be sure to look me up."

It gave me the greatest pleasure to receive the following from our old friend, Leonard Stone, who is now with the American Tel. and Tel. Company in New York City: "It strikes me that you have the answer to the problem of getting news for The Review. Congratulations. I've said to myself, says I, a dozen times or more, 'I must do my share toward the exchange of condolences.' But I'll find all those good intentions and plenty more when I leave this vale of tears — or otherwise. I couldn't resist a personal letter, even if my experience as an office manager might reveal the structure of the plan. Well, if you like those apples, here's what dope I can contribute to the hungry jaws of the press.

"My first job out of Technology was with the Champlain Silk Mills as assistant to the general superintendent, drafting and designing special machinery and gadgets, making myself as useful as was compatible with keeping out of the way and making myself inconspicuous. Then the War, to which I was introduced by our old friend Major Cole, through whose kind offices I got a commission in the Marines — first to fight, hurrah, and all that sort of rot — Paris Island, Quantico, rifle range, artillery range, schools and frequent battles in Washington were my lot from May, 1917, to October, 1919, when we finally disembarked as an infantry regiment, arriving just in time to be diverted from the Front to guard supply depots at Gièvres. The bull that drifted down the line was that the French stole so much that there was nothing to guard, so they turned the job over to the Marines. Somebody must have had a copious sleeve up which to laugh. Well, the Marines did it with finesse, usually, and my company guarded the Medical Supply Depot, one unit of which was the alcohol, spirits, and wine warehouse. Oh hum, well, I got out of the service just in time to be a police strike breaker in Boston and thus helped to get Calvin Coolidge his job as President of these United States — sweet land of liberty. And then back to the Champlain Silk Mills, which, trusting souls, gave me an opportunity to manage the Brooklyn mill with 500 employees. But why bring that up? They moved the mill, or what was left of it, up state the next year, and I got a job with the American Tel. and Tel. Company which, although not an eleemosynary institution, has been the instrument for keeping the wolf from the door ever since. First I engineered the move of the department of development and research into new quarters, then organized and developed a unit to provide departmental mail, file, transcription accounting, library, messenger, and similar services, a job called office manager. The salary ceiling for that job being inflexible and my capacities growing by leaps and bounds like a cactus plant, I got a transfer to an engineering unit devoting its energies to collecting facts about voltages induced in communication circuits by contiguous power transmission systems. Our chief instruments were automatic oscillographs which came to us as children and we did our best to train them in the way they should go. Rather good fun. But my talents — if any — had attracted enough attention along office management lines so that I was invited to continue the development of methods for proper presentation and reproduction of statistical work for the Bell system. So here I am, among the end of enders, and when you see the charts in the annual report of the American Tel. and Tel. and the other Bell systems stuff, maybe my gang did them."

Plans for the Reunion next June are progressing rapidly, and I hope for a record-breaking '16 attendance. It's going to be a good time and you will be sorry if you miss it. Make your plans now. — HENRY B. SHEPARD, *Secretary*, 269 Highland Street, West Newton, Mass. CHARLES W. LOOMIS, *Assistant Secretary*, 7338 Woodward Avenue, Detroit, Mich.

1917

From Phil Rowe at the Miner's Union comes the following: "During the recent meeting of the A.I.M.E. here, Walt Pont, Clif Carleton, Haig Nerses Solakian, and I enjoyed a very pleasant little get-together. This was the first time since graduation that I have heard of so many '17 miners congregating at one time. In the absence of Dick Lyons and other vice-presidents, we lunched at Keene's. The opportunity of seeing and talking to Professor Richards and Professor Locke made it indeed a rare occasion."

Not all executives are dismissed when mergers are made — witness Brick Dunham who has apparently lost nothing by the absorption of Walter Baker and Company, and now Carleton Dean, who was with the Merrimac Chemical Company when it was joined with Monsanto Chemical Works. Carl was transferred to Monsanto's main plant on January 11 and is understood to have a very responsible position with them there. He is living in St. Louis and apparently tears dropped on the paper when he wrote that new responsibilities would not permit his trip to the Corinthian on June 6.

From word received up to the present time, we seem to be assured of forty-five or fifty for the Friday night dinner and the Friday evening festivities. The main Reunion program on Saturday will be carried out at the New Ocean House at Swampscott, but a short distance from the Corinthian Yacht Club. The New Ocean House arrangements were made after we had spoken for the Yacht Club, presumably with the realization that the center of affairs would be where '17 met.

Dexter Tutein wrote from Berlin that he cannot get across for June 6 as he will be in Europe in the interests of Harris, Forbes and Company, probably until next year. He saw Dad Wenzell in Paris two or three weeks ago and believes that Dad will be back in time for the party. He adds further: "My very best to all the boys and tell them that on the eve of June 6 I will here in Bristol Bar or elsewhere be with them in spirit." — Ralph H. Ross must attend a conference of the general plant supervisors of the Bell System on Shawnee-on-the-Delaware, June 4 to 12.

At last a word from Joe Gardner, now officially known for check signatures and similar purposes as Paul Gardner. Space or no space, we give this letter in full. "Please forgive the delay in my answer. I am mighty sorry that I will not be able to be with you all for the Reunion, as my affairs here will not wind up until July 1. However, I am interested in the developments and am sending my check accordingly. I am planning to motor up to Boston some time through the summer. I hope you will be around somewhere so we can renew a bit of our youth together.

"You ask for news. I am not sure I have any. Life goes on rather busily and unruffledly. I might note that I have escaped the altar so far and I guess it has gotten to be chronic. At my advanced age one does not learn new ways easily. I have been continuing my studies here in Washington at the George Washington University and have so far a Master's degree in history and some work on my Ph.D. and am at present considering finishing the doctoral work at Harvard.

"I went abroad again last summer, taking my car this time and really traveling as I have always wanted. I covered some nine countries in four months. I spent several weeks in Berlin with Jimmy Wallis where he is United States Trade Commissioner and doing very well. We hit all the spots of Berlin and Germany together, within a radius of twenty-five miles from the Brandenburger Tor and then went on to Vienna and Venice and the Lido together. He is still the same old boy. I had a letter from him a few days ago and he speaks of coming home in 1931 for a visit.

1917 Continued

"Did you ever know a MacCormack at school who was in Tech Show? I believe he was a freshman when I returned with the Show to dance at New York. He is now at George Washington University taking courses for the Foreign Service examinations. We recently pledged him for our professional foreign service fraternity, Delta Phi Epsilon, of which I am Secretary, and I certainly was surprised to learn that he was a Technology man."

Louis Wyman writes to the point: "*Deo volente*, I'll be there. I guess every one who was at the Tenth will be there, if possible." — RAYMOND S. STEVENS, *Secretary*, 30 Charles River Road, Cambridge, Mass.

1918

After a long battle with bugs, Clarence Fuller is able to speak for himself again. Says he: "Although my desire to write you and others has been quite urgent, yet it is only recently that I've had a bit of the necessary ambition. So now I'm starting to do a few things other than read books. I have read a book a day for about a month now. I greatly prefer a juicy hot murder story where they get the murder over with in chapter one or two and then the detectives and sleuths keep the reader in the utmost suspense until the last chapter wherein the villain or the benefactor is revealed. 'A useless life,' I hear you mutter as you drag your nose out of a 687-page treatise on why licorice tongue-teasers should appeal to the junior populace in preference to old-fashioned peppermints.

"In case you chanced to wonder what I was making such a fuss over this winter, it started in with ye old-fashioned grippe, which the doctor changed a few days later to pneumonia (double lobar) and a few days later added pleurisy to the list. Now that ought to be enough for one doctor and one patient but not so. The worst was yet to come. Empyema came a few weeks later. I'd never heard the word before and am still at a loss to know why such an utter stranger should bother with me. After nine weeks in the hospital they decided my checking account must be getting low so they sent me home, weak, wobbly, and practically ruined. But I'm gradually fooling them and in a few more weeks I'll be back on the job."

The Engineers Club at 2 Commonwealth Avenue has agreed to provide facilities for our Class Dinner in connection with the All-Technology Reunion in June. Friday, June 6, is the day, 6:30 P.M. is the hour. The committee in charge consists of Magoun, Rogal, and Whitcomb. Better be there and see what such a trilogy can concoct.

Lacking the necessary sticks of type in local news, your Secretary journeyed to Manhattan Island with open notebook and poised pencil. Grover Whalen or somebody saw him coming, however, because Mal Eales had fled to Boston, Ken Reid was somewhere that his secretary wouldn't give away, Nat Krass was out to lunch, Sax Fletcher was off buying a new set of golf sticks, and Everett Rowe was hidden under a pile of statistics that would eventually save the Metropolitan Life $137.63 per light year. Not one of them was to be seen although I did tell one secretary that I had my foot in the door and that it would never be closed again until her boss came out and pulled me inside.

The function of assistants is to do the things which the executives cannot accomplish. So your Assistant Secretary was despatched to New York, charged with attending the luncheon and getting all the inside news. There was no luncheon.

But we can still hold up our editorial head. The slogan is saved. W. B. Engelbrecht comes to our rescue with the news of his marriage on May 29, 1929, to Miss Beulah Henderson of Wichita, Kans. They live at 836 East Drive, Oklahoma City. W. B. hasn't been able to stalk a single '18 man since going to Oklahoma in 1919, hence his desire to see a real live one out where the petroleum begins.

Remember that feed at the Engineers Club on June 6. — F. ALEXANDER MAGOUN, *Secretary*, Room 5-328, M. I. T., Cambridge, Mass. GRETCHEN A. PALMER, *Assistant Secretary*, 51 Houston Avenue, Milton, Mass.

1920

Here's the red hot dope on the tremendous Tenth Reunion. The famous Turks Head Inn at Rockport, Mass., is the place. Your committee assures you that they have picked the ideal spot for a grand and glorious time. Only forty miles over the road from Boston and half that from the big All-Technology spree which will be held at the Ocean House, Swampscott. Turks Head Inn combines the utmost in comfort and convenience with everything for out-of-doors — two good golf courses, tennis, a fine bathing beach, everything you could wish for. All in all, if you miss this Reunion you might as well curl up and die.

The organization of the reunion committee is evidence in itself that it is going to be a 100% job. With Bud Cofren as chairman, surrounded by such men as Abbott, Nash, Burrows, and Wells, with Ken Akers as Treasurer, Perc Bugbee and Joe Hennessy to round up the more distant members, Hank Pierce and Ned Murdough to make everybody feel at home on the reception committee, and Ted Hobson and Walt Sherbrook to provide the entertainment — need we say more?

I am happy to announce the arrival of Elizabeth Louise Etter on February 16 at Hollywood, which makes us wonder how long it will be before Snug can lie back and let his daughter make his fortune in the talkies.

The following letter came from Jim Downey and is worth quoting in full. Jim's address is Madison Apartments, 1200 North Main Street, High Point, N. C. "This is a letter from a long lost member of your Class wailing that he has had little opportunity during the past ten years of meeting many members of his old '20 gang. It is also an announcement that he is coming home for the Tenth Reunion in June, and I bespeak your most earnest interest in keeping me informed of all '20 plans. My degree was awarded with the Class of '20 despite my two years absence during the War, so if our class records do not indicate this fact, please amend them.

"The past eight years have found me consecutively with the Coast and Geodetic Survey, the Bethlehem Steel Company (I wrote the Structural Steel Handbooks of 1925 and 1926), and finally as a member of the above firm of industrial engineers. My work in the Geodetic Survey carried me into every state in the Union, Alaska, and Panama, and finally into the state of matrimony with the concomitant arrival of a young daughter, three years ago. Incidentally, the last state has been the happiest of all.

"At the present time I am busy with several of our clients located between North Carolina and Georgia, and I am doing my best to keep them from embarrassing situations with labor organizers. If you see Joe Hennessy, tell him I have frequent occasion to matriculate at the Pinehurst links, and I am looking forward to a real match with him this June."

Archie Cochran is with the Reynolds Metals Company at Louisville, Ky. — George Pierpont Morgan has left Texas and gone to Lake Charles, Va., where he is with the Gulf States Utilities Company. — Ed Ryer suddenly departed from Detroit without tipping anybody off as to why or wherefore. I learned, however, that his address is 10,410 South Jefferson Avenue, Detroit, Mich. — H. H. Smith has left Portsmouth and gone to Buffalo, and Wendell Sammet has left Akron and come to Brooklyn, from the frying pan into the fire, you might say. — HAROLD BUGBEE, *Secretary*, 9 Chandler Road, West Medford, Mass.

1921

Everybody over the top for the big drive on Cambridge on June 6 and 7 next. Another All-Technology Reunion — which is another way of saying that a good time will be had by all. Come on, you '21 men, get on the band wagon — get on anything that will take you to Boston for those rare days in June. We do not recall any one of the Class in the wagon business, but Johnny Lee and Herb von Thaden can serve you with airplanes and balloons, Phil Hatch wants some railroad business, Stuie Nixon has the automobile to suit every purse and every occasion, Irv Jakobson and Chris Nelson will make you anything from a rowboat to a *Leviathan VI* on short notice, and Johnny Bowman might even be coaxed into offering one of his Buffalo street cars for use in getting '21 men to Beantown. Shank's mare is not to be recommended on account of the epidemic of flat feet, nor will we tolerate Sam Hill's facetious suggestion that his du Pont explosives could blow a lot of us up there. Well, look around now and choose your mode of entrance into Boston and then

1921 Continued

run (do not walk) to those early classes on June 6. How about it, gang, how many of you will be there? Hmm, seven million, eight million. Sho! Sho!

Your Asec had a pleasant surprise one recent evening when S. J. Hill X phoned and told us that he lived only a few blocks away from us in East Orange. San came over and we had a long bull session. He is still with du Pont at their Arlington, N. J., plant. He looks prosperous enough to own the concern. He is more or less single, but we weren't to talk about that.

From the Boston *Evening Transcript* of March 11: "Captain Simon Jacobsen, U. S. A., and Mrs. Jacobsen of Louisville, Ky., announce the engagement of their daughter, Lillian, to Carl M. Cohen X of New York. Miss Jacobsen is attending the Louisville Conservatory. Mr. Cohen is a graduate of Technology and the law school of George Washington University. He is a patent attorney with the Radio Corporation of America." Congratulations, Carl.

The Springfield *Sunday Union and Republican* features a picture of J. M. Sherman X with a complete story of John's life history from which we excerpt the following: "John McDuffie Sherman of Chicopee Falls has been appointed to the Faculty of the School of Commerce and Finance of the Springfield division of Northeastern University to serve as instructor in statistics and forecasting. Mr. Sherman is employed by the Fisk Rubber Company and handles sales statistics and sales quotas from their Chicopee Falls plant. He has been with the Fisk organization since 1928. Mr. Sherman was graduated from Technology and the Harvard School of Business Administration." A letter from Johnny reports the birth of a daughter, Margaret Elizabeth, on December 5 last, and gives his home address as 501 Broadway, Chicopee Falls, Mass. Here's how, John.

F. S. Dellenbaugh, Jr., VI is director of general research in the United Fruit Company located at 1 Federal Street, Boston. — M. C. Hall VI has left New York and can now be found at 3518 Milam Street, Houston, Texas. Why the change, Mert, and what are you doing? — L. R. James VI is development engineer with the Public Service Company of Northern Illinois, at 72 West Adams Street, Chicago, Ill.

Don't forget the Boston Whoopee Party, June 6 and 7. Drop your Secretaries a line now telling them your news and that you'll be present when the big days come. — RAYMOND A. ST. LAURENT, *Secretary*, Rogers Paper Manufacturing Company, South Manchester, Conn. CAROLE A. CLARKE, *Assistant Secretary*, Bell Telephone Laboratories, Inc., 463 West Street, New York, N. Y.

1922

Details regarding the All-Technology Reunion are given elsewhere in this issue of The Review. The part that our Class will play as a unit in the celebration will be confined to a Class Dinner. I wrote to Heine for facts to give to you at this time regarding the Class Dinner, but apparently my letter did not reach him in time for him to send me the desired information. However, we will see to it that you have information regarding the dinner so that you may plan accordingly. Don't miss this big get-together. It has real possibilities.

There have been no letters in response to my plea for a goodly digest of personal information to be given at this time. However, the clipping bureaus are still operating. From the Boston *Evening Transcript* for February 24 comes the following: "Miss Sylvia Tucker Leonard of 55 Falmouth Road, Arlington, daughter of Mr. and Mrs. John Wood Leonard of New Bedford, became the bride of Georges R. Wiren of Boston, on Washington's Birthday. The ceremony was performed in King's Chapel by Rev. John C. Perkins. The affair was simple, with no bridal attendants, and the bridal couple left at once on a wedding trip. The bride, who is an artist, is a graduate of Pratt Institute, New York. The bridegroom was graduated from Technology and from the Imperial Russian Naval Academy. He is now associated with Stone and Webster as an architectural designer. Following their honeymoon, Mr. Wiren and his bride will live at 93 West Cedar Street, Boston, where they will be at home to their friends after March 15."

From the same paper of February 24 is the following announcement: "Mr. and Mrs. Eugene J. Fishback of Fairhaven announce the engagement of their daughter, Miss Charlis Hugh Fishback, to Frank C. Vogel, son of Professor and Mrs. Frank Vogel of Jamaica Plain. Miss Fishback is a graduate of Simmons College, of the Class of '27. Mr. Vogel, a member of the Class of '22 at Technology, is at present studying at the University of Vienna. He is a member of the Delta Upsilon fraternity. No date has been set for the wedding."

The following comes from the Montpelier *Argus* of January 4: "Miss Isabelle M. Colvin of Waltham, Mass., has been married to Frank J. Connolly, formerly of that city. Miss Colvin lived here until a few years ago when she moved to Waltham. She is the daughter of Mrs. Angus Colvin of Waltham. The ceremony was performed at the Park Street Congregational Church in Boston by Rev. A. Z. Conrad on December 26. The double ring service was used. After a wedding trip to Washington, D. C., the newlyweds will make their home on Long Island. The bride was graduated from Montpelier High School and from Burdett Business College. Mr. Connolly is a graduate of Waltham High and the Class of '22 at Technology, and later he attended Tufts College. He is now employed as sales-manager for a New York company."

The New York *Herald-Tribune* ran this: "Mr. and Mrs. Edward Wyllys Taylor Gray, of 14 Clinton Avenue, Montclair, N. J., have announced the engagement of their daughter, Miss Zilah Lee Gray, to Reginald Saxton Hall, of 17 Upper Mountain Avenue, Montclair. Miss Gray is a graduate of the Kimberley School in Montclair, and of the Emma Willard School in Troy, N. Y., and she is a member of the Junior League. Mr. Hall was graduated from Technology in the Class of '22 and he is a member of the Delta Upsilon fraternity. He is associated with the New York Telephone Company in the executive department."

The New York *Times* produced: "Miss Lee Villari of Pelhamdale Avenue, Pelham Manor, N. Y., has announced the engagement of her sister, Miss Annette Marie Villari, to Edwin J. Purcell, son of Mr. and Mrs. Thomas Purcell of New Rochelle. Miss Villari is a daughter of the late Mr. and Mrs. Joseph Villari of New York. She went to the Blessed Sacrament Academy in this city. Mr. Purcell went to Technology and is now doing research work in mathematics at the University of Colorado. The wedding will take place in June."

The Quincy *Patriot Ledger* for February 1 announced: "Congratulations are being extended to Miss Priscilla Page of Melrose and Winthrop F. Potter of South Weymouth, whose engagement was announced last Saturday at a bridge party at the home of Mr. and Mrs. Edward S. Page. Miss Page was graduated from the Brimmer School in Boston and Smith College in 1927, and she is now attending the Cambridge School of Architecture. Mr. Potter, who is the son of Mr. and Mrs. Jesse S. Potter of South Weymouth, is a graduate of Technology in the Class of '22. He received his degree of Master of Science from the same institution in 1923. He is in the engineering department of the New England Telephone Company in Boston. No date has been set for the wedding."

Vague rumblings have finally been heard from New York City, where the firm of Horn and Hodgins, Cut-Rate Reunioneers, has again taken out articles of incorporation. (It has probably taken out a lot more, too, that we haven't heard of.) The Class is hereby informed that a '22 celebration is planned as an integral part of the All-Technology Reunion in June. It will probably take the form of a dinner at which the brethren will gather and exchange reminiscences of Falmouth in 1927, together with plans for Falmouth or its equivalent in 1932, our Tenth. One wing of the Falmouth Arms Hotel still remains standing despite the activities of Johnny Molinar and Dyno Spaulding; the management, which is apparently anxious to collect insurance and go out of the hotel business completely, has tendered the Class a cordial invitation to return and complete the good work it started three years ago.

The dinner will afford us an excellent chance to discuss this and other matters. It is planned to award a prize to any one who can remember what happened in Falmouth later than Friday afternoon. This contest will be open to all comers save Bill Russell and Al Powell, the Roth Memory Boys, whose professional status bars them out — if we may, without misunderstanding, use the word bar in connection with these two gentlemen.

1922 Continued

In further advertisement of our coming meal, a special letter will some time later be dispatched, when the Secretary has been able to formulate more detailed plans. He has had word that the Horn and Hodgins firm held an informal meeting in Short Hills, N. J., some days ago, with a view to making its professional experience once again available, but both members of the firm were somewhat vague about it when approached, promising only that it would do what it could to re-create the Power Committee of 1927 from those few members who are still unhospitalized. — RAYMOND C. RUNDLETT, *Secretary*, Daniel Low and Company, Salem, Mass.

1923

How many of the gang will be on hand next month at the big Reunion? Make up your mind now to come back for the two days of June 6 and 7. Those who missed our own Reunion in 1928 will have another chance to renew old acquaintances and those who gathered at Manomet that June will certainly want to come to the All-Technology Reunion. We will have our own gathering Friday night, June 6. The place and other arrangements for the dinner are still in the making but you will be given all details later. Don't fail to come.

Well, until next month, here's the latest news. We hear that Lewis Powers was married in December to Miss Elizabeth Gast of Pueblo, Colo. The couple planned a honeymoon to California and then will settle down in Springfield. Harry Flynn is also a recent Benedick. He was married last fall to Miss Letty Tracy of Houston, Texas. They are now living in Port Arthur, Texas. Then, in February, Rosswell Baker took unto himself a bride. He married Miss Gwendolen O'Neill of West Newton.

We are very sorry to report the death of one of our classmates, Roger D. Courtney. Roger, who had been in poor health for some time, died on February 9 in Boston. We extend to his family the sincere sympathy of the Class.

Frank Knight is now located in West Paris, Maine, working for the United Feldspar Corporation as chief chemist. Frank was in business with his father until about a year ago when the business was sold. We learned that Van Nesté is now located in New York City, selling Truscon steel. Si Rice is also in the big city having returned to his first love, engineering, and is now with Jackson and Moreland. Lem Tremaine dropped in a short time ago on one of his periodic visits to Boston. Lem was telling us about the last dinner of the New York '23 crowd. The dinner was a joint affair with the Classes of '23, '24, and '25. It was held in January at the McAlpin, was well attended, and all had a great time. Evidently the committee running the affair did a bang-up job and will have to be drafted for our next Reunion. Among the entertainment specialties was a phony Amos and Andy broadcast with Lem as Amos and John Kerk as Andy. Then Bobby Burns, that bonny Scotchman from Ireland, pulled off a few songs that would make the original Harry Lauder feel like a penny with a hole in it. Coleman did some strong man stunts that held the audience spellbound until his 1000-pound dumbbell got away from him and floated to the ceiling. Among those present were Bob and Mrs. Shaw.

Well, here's hoping to see a lot of familiar faces once again next month. Watch for announcements. — ROBERT E. HENDRIE, *Secretary*, 91 Walnut Street, Braintree, Mass., HORATIO L. BOND, *Assistant Secretary*, 37 Concord Avenue, Cambridge, Mass.

1924

We will start off this month with the engagements. First we have that of Miss Emily D. Taylor of Port Washington, N. Y., to Lloyd J. Parker of the same location. Then there is that of Miss Jessie Sellers of Ardmore, Penna., to Kenneth B. Walton who is located in Atlantic City. And lastly there is that of Miss Frances Creveling Reilly of St. Louis to Harry F. Estill, Jr., also of St. Louis. The wedding took place on Saturday, January 4, two days after the newspaper announcement of the engagement. — Although not in the category of an engagement we have an item to add in regard to Ellis O. Jones, Jr. He has opened the new Columbus, Ohio, office of the Bellows Claude Neon Company, electric advertising display merchants, at 83 South High Street, and becomes sales director for that territory.

We wish to announce that the responsibility for the '24 Class Dinner in connection with the Reunion is going to rest with Frank Barrett, chairman of the committee, Bill Correale, Chick Kane, and George Knight. These men are experienced enough on class dinners to meet the tempo of '24 and their names certainly are guarantees of a perfect dinner. Here is just what Frank has to say on the subject: "June 6 looks like a big day in Boston this year. A home coming of Technology men will open then which will draw every son of the Institute who can get to it. Two significant things are announced by the Reunion Committee. First, the program for the entertainment of Alumni and their guests will be the most ambitious ever attempted. Second, the indications are that a greater number of people will attend than have ever been gathered for such an event. Technology is not alone in its attractions this year, for it is estimated that ten million visitors will be drawn to Boston by the national conventions and the Massachusetts Bay Tercentenary celebrations.

"The usual '24 enthusiasm is already in evidence. A special '24 dinner is being planned for Friday night, June 6, and we know every one who can get to it will be there. It will be preceded on Friday morning and afternoon by an Open House such as the Institute has never seen before. While there will be many scientific demonstrations, we hear the Committee is favoring those of us who have jumped the technical fence into less exacting pastures. Even if we have forgotten what Ohm's law means we can still appreciate the tremendous strides of the Institute in the pure and applied sciences.

"We understand that many of the Class will be accompanied by their wives. Well, the wives will have to find other amusement during the Class Dinner on Friday night. During the Open House on Friday, however, and on the all-day outing on Saturday, followed by a banquet and dance, they will be most welcome. In fact the '24 dinner committee will be glad to assist in arranging a dinner party for stray wives on Friday night, if enough are coming.

"If you can take in the whole Reunion, do it. If not, and you're near Boston, plan to come to the Class Dinner. Those who attended the Five Year Party at the Corinthian Yacht Club a year ago will surely be here, and we hope to see a lot more fellows who haven't been back for a few years." — HAROLD G. DONOVAN, *General Secretary*, 139 Girard Avenue, Hartford, Conn.

COURSE X

It gives me a great deal of pleasure to tell you that Mrs. William David Jones announced the marriage of her daughter, Patricia, to Howard Edward Whitaker on Saturday, February 22, at Chillicothe, Ohio. Whit begins his new life in Kingsport, Tenn., and mail addressed to him at that town will reach him. In the summer of 1925 Whit went to work for the Meade Pulp and Paper Company of Chillicothe, Ohio, and Kingsport, Tenn. He is still with the same company. Congratulations of the Class, Whit, on your marriage.

Paul Schreiber is back east and we shall quote from a fine letter we received. "As you can see from the letterhead I have made a change of jobs . . . I started here on December 6 of last year and have been more or less busy ever since. This particular company of the United States Rubber Company has undergone a reorganization during the past two months, and that is one reason why I am here. The Rubber Regenerating Company has been put under one management with the Naugatuck Chemical Company which is right across the railroad tracks from this plant. Up until a few months ago there was comparatively little technical control at this plant. The reorganization is now putting in this control. My duties are rather broad and include development, production, and technical sales. My experience in mechanical goods compounding at Goodyear helped me to know reclaimed rubber from the standpoint of the user, now I am getting the viewpoint of the producer."

Dave Schoenfeld is still with the Combustion Engineering Corporation at Chicago. — Don McCready is with the University of Michigan. Don, I sent that letter of yours in to The Review just the way you wrote it; someone else changed it. — Charlie Herrstrom is with the law firm of Mitchell, Chadwick and Kent in Boston. Here is a fine address to write to. — WILLIAM B. COLEMAN, *Secretary*, 52 Liberty Street, Kearny, N. J.

1925

Our foreign correspondents as well as our local ones having failed us this month, there isn't much news. We wish to make a special appeal to those who are far away to attend the Reunion to take a night off and write a letter to the Class or Course Secretary. We would like to see you, but if you cannot arrange to be present at the Reunion, we want to hear from you, find out what you are doing, and what our mutual friends are doing.

The news this month consists of two engagements: that of Miss Margaret Barret Brown to Courtenay Pope Worthington; and of Miss Winnifred Lamb to Stanley W. Davis. — FRANK W. PRESTON, *Secretary*, West Virginia Pulp and Paper Company, Piedmont, W. Va.

1926

Moved by the subtle influences of the zodiacal signs, Lent, and the approach of the vernal equinox, seventeen Boston members of '26 forgathered on the evening of March 6 at Walker Memorial. Since the sun was just swinging out of Aquarius, the Water Bearer, and into Pisces, the Fishes, those in attendance at this dinner disported themselves with circumspection befitting a season so dedicated to water, thereby distinguishing it from the gathering held last spring to render appropriate honor to Joe Levis, America's greatest swordsman.

The Class's astrological moodiness may be traced to Pop Constantine. Just as the elections in Maine indicate the results of national elections, so does Pop's state of mind determine in advance the kind of dinner the Class holds in Boston. The dignity of this last Barmecide feast was precisely the dignity always displayed by Pop under the signs of the Water Bearer and the Fishes. He disports himself differently under Gemini, the Twins, a fact delicately suggestive of the collective mood that will prevail at the big dinner to be held by the Class during the Reunion in June.

Most of the old guard were present and a few members of the coalition group. Invidious distinction will not be made between those who have feathers and bite and those who have whiskers and scratch, but here is the list: Charles M. Pickett, Jr., Mary O. Soroka (who came all the way from Worcester!), Joseph Levis, B. G. Constantine, Carl H. Olander, William Meehan, Stephen F. Spencer, Robert H. Brunton, Edmund P. Capone, Wilfred E. Carter, David M. Gordon, Wallace W. Sanderson, Theodore A. Mangelsdorf, William F. Rooney, Harold A. Willoughby, Eben B. Haskell, and J. R. Killian, Jr.

To be more explicit about the June dinner mentioned above, extensive plans are being made by a committee composed of Bill Meehan, Pop Constantine, Ted Mangelsdorf, Bill Rooney, and your Secretary. Miss Soroka is making plans for the ladies. The dinner will be staged in the assembly room at the Engineers Club, 2 Commonwealth Avenue, and as many as 100 can be accommodated. It is expected, of course, that many out of town members of the Class will be here for the Reunion and Class Dinner. The hour will be seven o'clock; the date June 6.

Announcement is at hand of the engagement of Miss Natalie Wilson du Pont, daughter of Lammot du Pont, President of the E. I. du Pont de Nemours and Company, to George Phippen Edmonds. Edmonds, it will be remembered, was a member of the golf team, the Calumet Club, and head of the Delta Upsilon chapter here at Technology. For four years he has been employed in Wilmington, Del., by the Bond Manufacturing Company. — W. C. Hemeon is now located at 26 Crandall Street, Adams, Mass., where he is superintendent of the Hoosac Valley Line Company.

This is a season of famine for Der Konvergenzpunkt. Maybe that is also attributable to the zodiac. It is hoped that the coming signs will be more propitious. — J. R. KILLIAN, JR., *General Secretary*, Room 11-203, M. I. T., Cambridge, Mass.

COURSE II

Bob Nisbet alone rises to the support of the Course with news of his activities in Schenectady on installation and maintenance work for the General Electric. His particular duties cover air conditioning equipment, ovens, and some special machinery — enough to keep any man busy, it would appear, and Bob claims to be quite normal in that respect.

He also draws my attention to an item that some of the rest of the Course may have noticed. Ernie Warburton, alias, Spider, after graduation from Technology and the Air Service R. O. T. C. unit, hied himself down to Texas for advanced training and finally wound up in the crack first pursuit group of the Army Air Corps. This unit, stationed at Selfridge Field, Mich., recently completed a 5000-mile Arctic patrol from their base across the northern route in the dead of winter to the west coast and return. Among the almost impossible flying conditions encountered, such as fifty below zero temperatures in open fighting planes, was a blinding snowstorm in which the patrol was forced to attempt to land on its return trip. In the spot that Ernie picked out for himself a barn suddenly appeared out of the snow and in dodging it his plane stalled into the ground, being left as a total wreck, but fortunately only slightly injuring Lt. Warburton. We trust that shortly, if not already, he will be back on the job again as good as new.

Bob reports a visit from Vernie Masterman who is still promoting the sale of York ice cream machinery. Further gossip confirms the whereabouts of Al Ruff as still at York, Penna., St. Onge in Lawrence, Mass., and Ford in a Philadelphia suburb.

A gang of the '26 men around New York were rounded up for an informal dinner at the Technology Club on March 19 and, despite several last minute withdrawals, there were thirteen that showed up for the occasion. Unfortunately there were no other Course II representatives present to keep me company, but if any around the city will let me know of their whereabouts, I will undertake to see that they are notified of similar get-togethers which we expect to have in the future.

In an effort to learn something of the fate of a number of our classmates whose records are completely bare in my files, I am going to broadcast an appeal for any information concerning them. Among those claimed by the port of missing men are Barrangon, Bergen, Brodsky, F. A. J. Brown, Brugnoni, and Bunnell. Knowing that all men have hidden ambitions as Pinkerton operatives, I'm offering this opportunity to gain experience absolutely free. — JOHN B. JACOB, *Secretary*, 159 North Mountain Avenue, Montclair, N. J.

COURSE X

Spring is here and brings new awakening to all nature, even as you and I. Bruce Humphreville wrote an interesting letter not long ago, stating that there is quite an aggregation of '26 men in New York City now. Bruce says he and Wick Eddy bumped into Al Bassett and Sid Brooks at the Technology Club not long ago. While they exchanged greetings, none other than Carl Everett walked in. Carl has been transferred to the New York office of the Cities Service Company, and he is moving all his possessions the end of March. Bruce's address is now 102 East 22nd Street, Apartment 5G, New York.

Fergie Ferguson and his wife sailed January 23 for Sydney, Australia. He is assistant in charge of the Texas Company properties in the Far East and expects to be gone about three years. — Herb Kaufman dropped in last week and was looking finely. Herb is in charge of a department at the Mutual Chemical Company which irons out all their troubles. Herb wondered why there was such a disparaging lack of Course X news. Well, the truth of the matter is that there is no news, solely and simply because the various members of the Course have failed to send any in. This leads to a new plan of sending out postal cards to a certain group of the Course each month. The group receiving the cards will consider themselves responsible for the news for the following month. So fill out your card when you get it and send it along. Herb says Bruce is the motivating spirit in the reviving of the '26 dinners in New York City.

Ed Gore left Baton Rouge La., some time ago for Baytown, Texas, where he was designing equipment for the Humble Oil Company. Ed is now in the patent department of the Standard of New Jersey at Bayway, but intends to return to Texas.

Jay Goldberg has been taking an intensive course in textiles at the Institute this winter. Hoppie Hopkins took the same course. Hoppie smashed into a mail truck and came out of it with a completely demolished Ford roadster, concussion of the brain, and not one scar. Hoppie said it was a queer thing he had been driving so slowly and carefully, but

1926 Continued

went on to say that he had made the hundred mile run from Springfield to Boston in all of two hours.

Bill and Mrs. Taylor are certainly to be congratulated on the arrival of their second child, Nancy Wentworth. Miss Taylor was born on November 25, and every one, including Bill, is well and happy. As you probably know, Bill is helping to design at Goodyear the new dirigible for the Navy Department, which is to be the largest in the world.

Walter Lobo has been back from South America for some time and is now with the M. W. Kellogg Company, makers of equipment for refineries, and is in their design department. Walter has just purchased a palatial home with tennis courts in the rear. — Maxwell, who was with the Cambridge Gas Company, is now with the New Bedford Gas Company. — Ted Mangelsdorf is still at the Institute in the Fuel and Gas Engineering Department and to him we are indebted for much of the news. — Fred Broughton will be at the Institute until the Fuel and Gas Practice School stations open up again. — LELAND W. CUMMINGS, *Secretary*, 216 Upland Road, Cambridge, Mass.

1928

Wedding bells are still chiming merrily for members of our Class. On Saturday, March 1, Dud Smith of Course XV, was married to Elizabeth McLean Case at Willimantic, Conn. The now Mrs. Smith is the sister of Chris Smith of Course XV, who acted as best man. Dud and Mrs. Dud will be at home in Honolulu after June 15. Their address will be 4577 Cahala Avenue. Dud promises to extend a warm welcome to all '28 men who should touch, in their travels, the balmy shores of Oahu.

Not to be outdone by Course XV Walt Mattladge was married on March 3 to Marie Louise Lehmann at Roslindale, Mass. Matt and his bride now live at 143 Montgomery Street, Newburgh, N. Y.

Word has recently been received that Fritz Rutherford of Course VI A, has joined the ever increasing rank of '28 men with matrimonial ambition. His engagement to Molly Gordon Howe of Cleveland was announced on December 21, 1929. Fritz at present is working in the research department of the Cleveland Railroad Company along with Chuck Ricker, Course XV.

In conjunction with the All-Technology Reunion, our Class will hold its first get-together dinner since graduation on June 6 at the University Club and here's hoping that most of you men can return to Boston at that time to renew old acquaintances. — GEORGE I. CHATFIELD, *General Secretary*, Room 11-203, M. I. T., Cambridge, Mass.

COURSE I

The gang is apparently settling down, or perhaps vagabonding is on the decline only during the winter months. At any rate we can report only one new job. Ed Ure has moved to New York from Boston. He left his job with Bemis Industries on February 15, and started immediately with Barney Ahlers, the company for which Cy Meagher has been working since graduation. Ed's job at present is outside, on the construction of a ten story flat slab concrete building. His new address is 546 West 156th Street, New York.

Reliable sources inform us that Contreras is now municipal engineer of the City of Caracas and that Gabe Disario is his chief assistant. We'd like to hear from one or both of these hombres as to how they are rebuilding the Venezuelan capitol. — A letter from Al Daytz makes a formal claim for the title of Class Baby to be bestowed on Lois Lorrane, and Al wants to hear from any one who challenges his claim. He is still living at 20 Dana Place, Roxbury, Mass., and is working for the Boston and Maine.

Another member of the Course now among the married is Greg Venture. The big event occurred in January and the newlyweds are living at 175 Orient Avenue, Jersey City, N. J. Greg is still with the Western Electric in Kearny.

Clark tells us that he is working as estimator for the Burton H. Wiggin Company, engineers and contractors of Lowell and Boston. He enclosed a letter from Luby, dated November 3. At that time Jack's address was 63 East Fifth Street, Peru, Ind., and he was working on surveys for the Wabash Railroad. The above address is certainly long since obsolete, in fact, if Luby is following his usual habits, the job is almost equally obsolete. However, I am inclined to believe that Jack liked this job well enough to stick a bit longer than usual. One such guess, as I remember, proved wrong and the same may happen to this one at any moment.

I've seen Walt Hodder several times in the last few months, but always at times when business was very secondary. Those who remember Walt's habits in East Machias will understand. He does find things very interesting in the field office of the subway system. His address is 220 East 18th Street, Brooklyn. Incidentally, Hal Porter's address is the same, their apartments being respectively 2R and 3R. Hal is still with the Otis Elevator Company. Mangurian finds airplane design more and more interesting. He expects to move soon to Hartford, Conn., where his company will begin operations in a new factory.

I saw Shipley about a week ago. He says that being in the Air Corps means flying, riding horses, and playing bridge with officers's wives. Further conversation develops additional duties but Ship is well satisfied. Josephs and I continue with Electric Bond and Share. Art has the responsible job of keeping himself and a squad of eight men busy on the design of a large arch dam by the latest and most elaborate methods of calculations as used by the United States Reclamation Service. I have recently been working on preliminary studies for a new 18,000 k.w. hydro plant in Mexico. — GEORGE P. PALO, *Secretary*, 143 East 39th Street, New York, N. Y.

COURSE V

After the long list of letters revealed in the last number of The Review it was not a little shock to receive choice bits from two apparently lost souls. Vernon Lewis crashed through with some interesting information which I will reveal in part. He says: "Speaking for myself, things have been moving along about as they should, I guess, which is about half as fast as would please me. My thesis concerns itself with certain abnormalities in the behavior of hydrochloric acid. To date I have found that whoever used my motors before me must have lubricated them with chewing gum and used sea sand for brushes, that the under sides of the Institute laboratory benches are not clean, and that there are several things about conductivity measurements I don't know. Our old classmate Coe works down the corridor. He is assembling one of the Goldbergian apparati for which physical chemists are noted."

I don't know whether it was mentioned last month or not, but Vernon calls it to my attention, so we will announce that Mrs. MacGillivray presented Gerry with a brand new daughter. We have to take Lewis's word for the brand new part of it. It looks very much as though this is the first baby in the Course. At least it is the first one to get any publicity.

Jack Grant admits that it's about time he crashed through with a little information and in the same breath he observes that most of the boys are rotten correspondents. He has also caught on mighty quickly considering that it's only two years since graduation. This is proven by the statement that he made to the effect that the undergraduates don't know what a real day's work is. Jack has calmly announced that he is getting married in the latter part of June. Miss Alberta Buckland of Corning, N. Y., is the lucky girl. He added the unnecessary remark that this impending event is one thing that has used up pretty much of his time. He is still working for the Pyrex Company, but as one of the boys so aptly observed, Pyrex now bounces no better than formerly. Jack says: "I have acquired a fine boiled lobster complexion from peeping into furnaces at temperatures of 1600 degrees Centigrade, or so. It's great stuff if one is properly parboiled." The thought has probably struck each one of us simultaneously that Jack had a good start as far as being properly parboiled is concerned. We will leave this for Jack to deny if he wants to do it.

A secretary really shouldn't give any information concerning his own activities as he is sufficiently open to libel in reporting other news. However, it will do no harm to say that I'm having a lot of fun in the publishing business and find that business research has a lot less grief in it than scientific research — to say nothing of the chances of getting useful results. There are still several of you who haven't been heard from this year and it's about time you did something about it. I'm seriously considering sending

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fifty word telegrams collect to all those who remain delinquent on May 1. — ALBERT S. DEMPEWOLFF, *Secretary*, 162 West 71st Street, New York, N. Y.

COURSE VI-A

Those of you who read the March issue of The Review will probably remember a discussion of several members of the Course who had formed themselves into a group for the sole purpose of keeping in touch with each other and keeping an interest in each other's work. This group was composed of Otto Brune, Hal Curtis, Chick Lyons, Frank Sweeney, Hennie Wengen, and Pete Zugale, and myself. To insure our continued close friendship we planned get-togethers at certain intervals of time when we hoped to discuss the general welfare of every one, the latest achievements in science and the electrical world, and of course, the latest choice stories. To date we have been able to effect five of these meetings and each one has been a huge success both from the standpoint of attendance and good time. To further insure our knowledge of each other's whereabouts, a book was started in which each one wrote something about himself and then sent it to the next on the list. This book has made one complete circuit and is now on its second round. It has been suggested, however, that on the completion of the second round we remove it from the mail to avoid any trouble with the postal authorities and start a fresh book. Nevertheless, it does form a very interesting record of each one's progress.

With regard to the members of this group, little can be added to what was said in the March issue. There have been no changes in addresses. Otto Brune is still at the Institute working on the a.c. network. Hal Curtis is in Phoenixville, Penna., working for the development and research department of the American Tel. and Tel. Company. Chick Lyons is in Syracuse for the long lines department of the same company. Frank Sweeney is working for Graybar Electric in New York City. Hennie Wengen is with the Central Hudson Power and Light Company. Pete Zugale is working in the engineering department of the New Jersey Bell Telephone Company. I am with the commercial department of the New York Telephone Company located at Richmond Hill, L. I. As Ted Lewis puts it, "Everybody's happy."

Since the last writing, however, another group has been uncovered. This one is composed of the Bell Telephone option men of the Course. It seems that before leaving school they agreed to write a letter to some appointed general secretary who was to abstract the letters and send the result to all that they all might find out what each other was doing. Here is another example in the Course to keep up the college friendships. This attempt was likewise successful and the scripture which they chose to call a round robin letter became a glorious reality. Cole Armstrong was appointed the goat and he certainly had a job on his hands to edit the letters. It hardly seems possible that a robin could assume such generous proportions in the north in the winter time.

From the letters one can locate a number of the fellows. Jim Tulley is hard at work in the Bell Laboratories in New York, and seems to be enjoying a number of movies at the expense of the company under the guise of experimenting on the removal of objectionable noises in the reproduction of talking movies. Jim, if you actually removed the objectionable noises there would be nothing but the clicks left. Jim went abroad for a while, but living in Brooklyn wasn't so hot, so he returned to this country only to settle down in East Orange, N. J., with Ted Perkins, Jim Rae, and Joe Riley.

And Prendy, poor Prendergast is stranded away out there at the Hawthorne Works of the Western Electric Company, all mixed up with a lot of women in the Y. W. and hollering for help. He says in his letter, "Oh, for a Jim Tulley!" Prendy says it is very cosmopolitan out there though I imagine English is spoken in certain places. He is busy working with various phases of magnetic iron and if he is successful in keeping the iron separate and distinct from his magnetic personality, we all predict a great future for Prendy.

Noel Olmstead is palling around with Colonel Green out at Round Hill on Buzzards Bay. From what I can gather one leads a great out-of-door life there and it is a particularly desirable place to work. On rainy days Noel amuses himself on the study of rigorous solution of waves on wires, involving a study of transmission at high frequencies. Olmstead says he went down there to get some fresh air and to learn something about the electromagnetic theory. He'll probably undertake the second part of his purpose shortly.

Cliff Edgar labelled his letter "News from Brooklyn." Every one is glad to hear from Cliff, but when he puts it that way, it takes some of the interest away. Anyhow, Cliff managed to tour the country before settling down and succeeded in getting mixed up in a flivver, a mountain, a cloudburst, and Noel Olmstead in Kansas. At present Cliff is toll engineering in the Long Island area of the New York Telephone Company. He occasionally sees Al Cary who is also in the traffic department of the same company. From the letter, Cliff is very optimistic about the job.

There has already been a great deal printed about Dave Bradshaw and by a lot better reporters than I ever hope to be, but the fact remains that Brad received a broken rib, a broken jaw, a cut forehead, and general bruises in his fall down Mount Ranier. Notwithstanding, Brad survived to start work with the Fox-Case Corporation and is evidently having a wonderful time. He is shooting pictures of chorus girls, some famous artists, chorus girls, a number of interesting events, chorus girls, many important speeches, and did I mention chorus girls? Who wouldn't be enjoying the work? Probably a lot of us would like to be shooting chorus girls. The work affords a good deal of travel and that, together with its general interest, makes Brad seem well satisfied.

Jack Barnes has the edge on all of us. He succeeded in getting in a trip to Europe before starting on the new grind and he certainly did a lot of traveling. Some how or other Jack didn't seem to get enough school and he had the courage to take up graduate work at Princeton. Jack invites us all down there if we can arrange it. Better be careful, Jack, Old Nassau is a beautiful place and has a distinct flavor of apple. We may take you up on that invitation.

Ellis Johnson is located at the Institute. I think he signed up for Round Hill for the same purpose that Olmstead did only Johnson elected to do the work first and get the outdoor life later. It seems to be Johnson's problem to develop an apparatus for measuring sound pressure, velocity, and so on. Well, he's got part of the job done. He's got his name on one of the doors. To use Ellis's words, "Otherwise things are as usual." Drop in and see him in room 4-209.

Ted Perkins has taken advantage of his internationality and gone to work for the International Tel. and Tel. He seems to have tough sailing trying to defend his job against his roommates who all work for American Tel. and Tel. However, Ted has the big job of trying to speed up transmission on a submarine cable. Here's luck, Ted.

About the most important announcement we have to make for Chet Day is his engagement. Congratulations, Chet. I guess his evenings are pretty well taken up, but day time finds him in the transmission department of the New England Telephone Company. At this particular time he and I are at Technology helping recruit the 1930 crop of men, but his other work was so important that they had to pull him off this job and return him to the office. It's great to be that way. Somehow I feel they were glad to get rid of me at my office.

Al Carey writes that he is thoroughly enjoying his job with the traffic department of the New York Telephone Company. He is living with Monty Burgess at the West Side Y. Monty, by the way, is with the development and research department of the American Tel. and Tel. and is completely surrounded with complex numbers.

Army, after editing that big, fat robin was able to say a little for himself. He seems to be aiming for an administrative job rather than at something technical. Nevertheless, he is in the traffic department and when not there, he lives in Montclair, N. J.

Since the last issue, I received a couple of very interesting letters. One was from M. E. telling that Art Elliot was away down in Galveston, Texas, with the Galveston Electric Light and Power Company. That surely was news to me and I imagine is to the rest of you. As far as I know, C. C. Smith is still with the Detroit Power and Light Company and is still married. Ferdie Meyers is with Stone and Webster out in Washington.

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St. Louis, Poitras, and Ver Planck are with the General Electric in Schenectady. I'd be glad to give you something more definite about these men if they will only drop me a line. I certainly appreciated the two letters I did get and want to thank the writers through these columns.

Fellows, here's the swan song for now. If you want the addresses of any of these fellows, either Army or I will be glad to furnish them. Let's have more intercommunication and keep up these well started ideas of keeping together. Best of luck and a happy summer to you all. — HUYLER B. ELLISON, *Secretary*, 41 Wallace Street, Freeport, L. I., N. Y.

COURSE X

We have an unexpected yet thoroughly enjoyable treat this month in the form of a letter from René Simard who, you all know, is studying for a Doctor's degree in Germany. The letter is so interesting that I am going to give it to you in full. Get out your map of Europe, for René takes us on quite a trip and you will want to trace his route as we did with mingled envy and hopes: a friendly envy of René's good fortune, and hopes for the future. Here is it: "I have just received the February Review and sadly noticed the absence of news from the old gang. So I reasoned out that it was at least partly my fault, so here I am to tell you what has been happening to me since last June.

"After leaving the Institute I spent a short two weeks at home and left from Montreal on June 6 for Southampton with my brother and a friend. We had a pleasant crossing despite the fog and cold around the icebergs. The boat train took us directly to London where we spent a week, mostly with Cooks!' We were all three so anxious to land in Paris that London could not keep us very long.

"We saw Paris at the height of the tourist season during which time English is spoken more often on the boulevards than French. Three weeks of loafing on the café terraces were enough to saturate us with this lazy life. Just about then a friend came up from Geneva and the four of us rented a little Renault 6 h. p. with which we set out to see the wide world. The little bus took us over the terribly torn up battlefields to the fashionable Channel beaches, Rouen, Dieppe, Harfleur, Deauville, Caen, Dinard, Saint-Malo, across the Cherbourg peninsula to the mouth of the Loire, la Boule, Saumur, Angers, and Tours, visiting all the wonderful medieval castles on the way. From Tours by Angoulême and Poitiers to Bordeaux, then to Bayonne and Biarritz and St. Sebastian in Spain. Then further to Pau, Lourdes, and Toulouse and finally back north by Limoges, Orleans, and Paris. All that was done in three weeks, 3200 kilometers at an average cost of $40.00 for each of us. Pretty nice, what?

"After some more rest in Paris for a few weeks, I started for Berlin by way of Strasbourg, Heidelberg, Mainz, and Cologne. I've been here now since September, working with Freundlich on a little problem of 'absorption reversal' for a Doctor's degree. Besides Freundlich in colloid chemistry, I meet Haber almost every day. Bonhoeffer who discovered the para-and ortho-hydrogen also works here. Every once in a while at some colloquium I see Einstein, Planck, Schrödinger, or some other big chemical or physical bug.

"I have found out that German is not an easy language to speak and before registering at the University, I had to spend a month at the *Deutsches Institut für Ausländer* and take a little exam.

"Berlin is a darn nice city to live in. With four million inhabitants and a good part of them communists there is always plenty of life, not to mention the night life associated with all big European cities. By the way, the café pictured on page 195 of The Review, the 'Haus Gourmenia' as it is called, is one of my favorite haunts. Despite the sad sayings of Mr. Billings in his article, I think that one of the great charms of Berlin is its very modern, or rather modernistic style of architecture. The interior of the pictured café would cause Billings to close his eyes and shudder or else weep bitter tears because it might be called more 'extreme in design' than the outside! Anyway it is a great change from the Back Bay architecture and is in the best direction, I believe.

"As it happened that the boss of the Kaiser Wilhelm Institute had provided two weeks of Christmas vacation, I decided to do better than loaf around Berlin, so I picked my friend and together we made Italy in about twelve days. Venice was most interesting, of course; Florence is full of art treasures; Rome can occupy a tourist for months at visiting old ruins, and Naples was naturally marvelous, Pompeii and Vesuvius adding their interest to the well-filled program.

"I am already planning a few more trips for the spring: Holland, Leipzig Fair, Dresden Munich, and the famous Passion Play at Oberammergau; so you see that besides doing a little amount of research, I am not losing any chance to 'see this world before the next,' as the Canadian Pacific puts it. And that is not all. Berlin possesses three permanent opera houses and at least two symphony orchestras of the Boston Symphony grade, so that I have plenty of choice to tickle my ears with good music. There is one drawback; namely the tone films are still in their infancy in Germany and, as the producers insist on using the apparatus for every movie that comes out, the result is rather maddening for one's auditory organs.

"The Germans are very enthusiastic about balls and especially in January and February there are always two or three great affairs every night, very often masquerades. There are always from three to six thousand people at these things in special halls built for the purpose with sometimes as many as twelve orchestras spread around the house.

"I expect to be here until the summer of 1931. I am in no hurry at all to start working — a student's life in Europe is perfectly satisfactory for the present. By the way, may I add that it beats life at the Institute. And how! I hope to read news from the old bunch of pipe-fitters and wrench wielders soon."

Let's hear from some of you other hold-outs. René certainly did a good job when he did write. We would like to start the October issue with lots of news from you all. — ALBERT J. GRACIA, *Secretary*, 2035 South 18th Street, Cuyahoga Falls, Ohio.

1929

It must be that spring fever has just as much effect on the young graduate as it had on the young undergraduate. News this month is pretty scarce and we owe what we have to a very few men. Jo Llanso II, Hal Fairchild XVI, Gordon Williams I, and Ken Gold V are the only contributors to date for this issue, and you will find just the kind of letter we are all awaiting from you printed in the columns of their respective courses.

This morning, in spite of its being Sunday, I turned out early to go out to the Goodyear-Zeppelin Dock to watch the erection of the huge master ring of the first of the two gigantic Zeppelins that Goodyear is building for the Navy. As many of you have probably already read in one paper or another about the construction and assembly of the master ring in a horizontal position and the delicate job of turning it through 90° to a vertical position, I will not describe it. A very nice task, but it can be done if proper precautions are taken to prevent undue stresses and strains in the members comprising the ring. I saw Hal Dick II and Hank Gibbons II out there reading angles, and so on, as the ring went up. Both of them transferred from the rubber end of the business to the Goodyear-Zeppelin Corporation some time ago and like their new work very much.

Write and tell us about your job, for we are all interested. — EARL W. GLEN, *General Secretary*, 339 Hillwood Drive, Akron, Ohio.

COURSE I

An apology is due Bill Whiting for the erroneous statements made regarding him in my last letter. Before leaving the Institute Bill made up the time he lost last spring and blossomed forth with his degree and now rates as a full fledged member of the Class of '29. Which only goes to show that you can't believe everything the Course Secretary writes. Bill writes that he and Cathcart were at summer camp together last summer and that Cathcart is now working as topographical engineer with Stone and Webster Corporation in Raleigh, N. C.; he also reports that Blizz Snow is working for the New York Central Railroad, and is living with Art Gulliver in New York.

Early in the year Hunter Rouse sent a post card from Karlsruhe. He said that it was just "a little reminder that German beer can't be beat and the wine has a baby's dream licked all hollow."

The '28 Class Notes contained the news that Norm Ballou sailed for England last September to study international law at Oxford. Norm certainly believes in hav-

1929 Continued

ing a well rounded education. — Larry Newman is still working on telephone toll lines in Connecticut and is living in New Haven. He thinks that New Haven is pretty dead and wants more excitement for week-ends. Can anyone help him out?

As for myself, there is nothing particularly pleasant to report. Beginning early in January my health went from bad to worse, so the latter part of February I just threw up the sponge and quit trying to earn a living. After spending two very pleasant weeks in the Blue Ridge Mountains near Tryon, N. C., I came back to Massachusetts. At present I am convalescing after having parted with my tonsils, and am wondering whether I shall starve to death before my throat gets well enough for me to eat. By the time this letter is published I expect to be back in the game again. — GORDON R. WILLIAMS, *Secretary*, 37 Mugford Street, Marblehead, Mass.

COURSE II

From Joaquin Llanso in East Orange, N. J., comes the following letter: "I have been intending to write you for quite some time, but it hasn't been till lately that I acquired this typewriter. You see I did not want to make you go through the painful process of deciphering my handwriting. I follow the Class Notes in The Review with great interest. You see, strange as it may seem, I haven't seen a single fellow from our Class since graduation. It seems as though every one got positions everywhere except in this place. It is true that I have come across one or two Technology men, but they were all from the Class of '27. K. A. Smith who was quite active at track, you'll remember, happens to live in the same place as my immediate boss. Then Ted Casselman is with Worthington and, of course, I met him there. But outside of these two, I have seen no one.

"As you will remember I was the only one to get tied up with Worthington. However, I wasn't the only one as far as other colleges were concerned. There were all together twenty-four of us in the last year's training division. We finished our training course the first week in December and were assigned to various departments. I was sent to the experimental engineering department as one of the test engineers. While in this department I have had a hand in the testing of practically every Worthing product, from the lowly trade pump to the largest condensers. Needless to say, I like the work very much.

"Later on, perhaps in June, I expect to be transferred to the export office of the company in New York City. After a couple of years there I hope to be sent out as a field engineer. On the other hand there is the chance that in six months I may join my father's logging business in Spanish Morocco in North Africa as an assistant engineer. Time will tell.

"Although I have seen no one in our Class and Course, I have kept in touch with some of them by mail. P. P. Vinet left for Canada right after graduation. For a while he was connected with a paper company as assistant to the chief engineer. Then due to illness he had to resign. He is back on his feet again and is now with a firm of consulting engineers in Montreal. Emery Low is at present holding down a big drafting job at the Eastman Kodak Company at Rochester, N. Y. And lastly Avalos Vez is with the Dry Quenching Equipment Corporation in New York City. He seems to be in the same position as Low, draftsman.

"I wish you would let me know where Ralph Vezin is and what he is doing. I have written him at his home without the least success. Did he finally enter the service of the Baldwin Works in Philadelphia?" — RALPH VEZIN, *Secretary*, 205 South 42d Street, Philadelphia, Penna.

COURSE V

Kenneth M. Gold wrote in the following long letter: "I gather from the recent issue of The Review that some of the Course Secretaries are not exactly filling their positions. Moreover, I had written Frank Stratton a long letter from Port Arthur, Ont., visited him and Art Robinson on my way down from Toronto through Rochester, wrote them two successive letters, and have had no further word from them. As you probably know, Stratton and Robby are with Eastman Kodak, Stratton being in the research department and Robby in the print control division. They seemed to be getting along finely.

"The fact is that we have the dope on every one from Course V with the exception of the ever volatile Livingston Gardner. I suppose that you know Ruth Davies was married in September. I am certain that Frank Stratton can supply the information as to the date and the identity of the groom. She has paid several visits to the Institute, but I have not had the opportunity of seeing her. There is also word to the effect that Connie Sharp is doing some sort of microscopic analytical work on the Coast. However, this may be wrong since we heard through the same source that Gardner was out at California Institute of Technology in Pasadena. A letter which I sent him at that address was returned.

"Newell Mitchell is with the Chase Metal Company doing metallographic research at the Waterbury plant, and Jerry Palmer is doing the same sort of work for the Aluminum Company of America at Cleveland. I saw both of them at Christmas time when they were in Boston. Jack Mark is one of the principal chemists for a plastic company in Mansfield, Mass. The rest of us are back at school, Gerry and Higbie are out for the doctorate in chemistry; O'Brien, Dave Rubinstein, and myself are all taking the S. M. this June. The letter I wrote to Frank from Port Arthur contained a detailed account of my wanderings this summer, and while I am not going to repeat it, you may obtain the substance from the following paragraph.

"I reported on June 5, the day after graduation, to the Montreal office of the Radiore Company of Canada, Ltd., with full expectations to be directly shipped via plane into the north country on geophysical survey work. Quite the contrary, they made me wait around in Montreal for about a week, in the event that a contract might come through from Chibougamau, which is three hours by plane, or from the Michipicoten district on Lake Superior. Well, as you know, Montreal is all right but not for a week at a time, and I was quite relieved when word came through that I was to be sent to the Eustis Copper Mine, near Sherbrooke, even if it was eighty miles further removed from Hudson Bay and only thirty miles north of the border. Two weeks there, ten days at a copper prospect thirty miles to the northeast, copper low and food worse. The Fourth of July I spent in Montreal, pulling out that night for the little French town of Trois Pistoles, where the river meets the Gulf of St. Lawrence, just opposite the mouth of the Saguenay. I spent only seven days there which was pretty good considering the fact that the boss didn't know a word of French and had a pretty tough time reading the menu. Besides, we were looking for lead and there didn't happen to be any lead. Then the City of Quebec and back to Montreal again, where I spent another week . . . I know that town better than I know Boston. Relief came on the nineteenth — this time a real job and a real trip — by the C. P. R. to Port Arthur, thence eighty miles up the Canadian National line to Kashabowie, at the end of which was a ten mile mule-train ride through the parched bush, and at the end of this the Tip Top Mine. I ought to put mine in quotation marks. Occasionally this outfit would dig up a piece of rock running about 2% in copper, make an assay of it, and multiply their results by five. It made excellent reading material for the financial page of the Montreal *Star* or the *Northern Miner*, which apparently every good Canadian reads for no good reason at all. The mine wanted more ore reserves and we were to find them. Well, I can't say we did, but we managed to hand in a report after over a month of swimming, canoeing, and enjoying the best food that can be had east of Manitoba. The company was satisfied; I guess they multiplied our results by five. About the middle of August the mining market crashed, and I was urgently requested to come down to Toronto with the rest of the mining market. I had a very enjoyable trip down the Great Lakes on the *Hamonic* to Toronto, the Wrigley Swim, then Rochester, and home. . . . Plans for next summer have not as yet materialized but I hope to be with an aerial prospecting company flying the northern frontier. Next year I expect to be at Minneapolis at the University of Minnesota for a doctorate in geology." — FRANK B. STRATTON, *Secretary*, 654 Main Street, Melrose, Mass.

COURSE XVI

Hal Fairchild sent in a long letter to Earl Glen containing news for his Course. We quote in full: "After reading your plea for news in the March Review, I

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can't with a clear conscience pass the buck any longer. For six months I have tried to play that old Army game with Paul Baker, but it hasn't worked. There were eight Technology men who reported at the primary school at Brooks Field on July 1, Riley, Pierson, Waite, Hersey, Lyle, Baker, Fay, and myself. For a month we had the ignominious title of dodos, were confined to barracks, stood three inspections a day, drilled, and in short, led a rather miserable life. In case you may not remember, a dodo is a weird African bird of antediluvian vintage, with minute wings and a tail so heavy it can barely stagger off the ground.

"After what seemed ages we were assigned instructors and were formally introduced to an airplane. Why my breakfast didn't go overboard is still a mystery. Never have I been cussed out so often or so potently. It seems to be a standard part of an Army flying school's curriculum. All of us soloed in about eight hours, but Waite, Hersey, and Lyle were washed out on flying shortly afterward. They had company in their misery, for fifty-five out of the eighty-six met the same fate.

"For four months we wallowed through this remarkably clear Texas air, trying all manner of approaches, acrobatics, chandelles, and formation work with more or less success. In November we went on to service type ships, D H's and Douglas 02-K's. The former were familiarly known to wartime pilots as 'flaming coffins,' but they have since been much improved. After the comparatively small size of a P T, a D H seemed like a first cousin to a Mack truck. The nose stretched out interminably in front and there was a superabundance of wings. You felt as though you had along not only the family mansion, but the barn and outhouses as well. For all their faults, though, they are great old airplanes. We flew them until last week whenever the weather would permit. And right here let me state that San Antonio's claim of being the place where the sunshine spends the winter is about as true as Philadelphia being the city of brotherly love. Northers blew in time and again, bringing rain, snow, and some of the coldest weather this section has experienced in thirty years. Now the mercury is climbing upward again and preparing to parboil us.

"Last week saw the end of our primary training at Brooks and our hegira over here to Kelly, the so-called Mecca of Army fliers. Four more months of advanced training and we all hope to be strutting some silver wings. Baker, Fay, Pierson, and myself are specializing in pursuit and looking forward to tackling P-1's and PW-9's next week. Bob Riley strayed from our flock down to the bombing section where he lives in anticipation of the day when Leaping Lucy will fondly answer to his heaving and hauling. Just now, six hours of ground school a day recall pleasantly (?) many similar ones spent at the Institute.

"King Cooper phoned me from New York when I was up home for Christmas. He had just returned from his extended tour of points both east and west of Suez. He reported a sincere dislike of cattle boats. Don Hersey is working for Pratt and Whitney in Hartford and Larry Waite keeps Berliner Joyce in Baltimore from going on the rocks by designing wind tunnels and special Army pursuit jobs for them in his spare moments. Have you any news from Hunter Rouse or has he been completely engulfed in the foam for which Germany is famous?" — PAUL S. BAKER, *Secretary*, 140 Summit Avenue, Wollaston, Mass.

Atlanta Association M. I. T.

The Association held its annual formal banquet on the night of February 25 at the Piedmont Driving Club. The following members and guests were present: W. Rawson Collier, '00; Francis C. Foss '25 and his wife; Russell S. Grove '25; William E. Huger, Jr., '22 and his wife; Jacob Lichter '19 and his wife; Harold C. MacLaughlin '18 and Miss Trowbridge; Thomas E. Moodie '24 and his wife; William J. Sayward '01 and his wife; Charles A. Smith '99 and his daughter, and Richard W. Smith '21 and Miss Corrigan.

The chicken reduced to bones, President Huger called for a report of the nominating committee, which, as usual, had disagreed and presented majority and minority reports. By adroit political manipulation the majority candidates were railroaded into office in the shortest election in the history of the Association. The members awoke to find that they had elected Charles A. Smith, President; Richard W. Smith, Secretary-Treasurer; and Francis C. Foss, Sergeant-at-Arms. A few feeble protests of the so-called "Smith ticket" were ignored by the President.

The attention of the Association was called to the fact that the name of Rawson Collier had daily for the past two months been on the front page of the newspapers as foreman of the grand jury investigating charges of graft among the city officials. In an attempt to get newspaper publicity for the other members of the Club, a grand jury was immediately formed of the ladies present, headed by Charles A. Smith as foreman and with Harold C. MacLaughlin as prosecuting attorney and the other members as lawyers for the defendants. One William Kelley was tried for larceny of five cents fifteen years ago, but was acquitted because he had a good looking wife. One L. M. Thatcher was tried for taking a drink of beer before the Volstead Act, indicted, and bond set at $5,000, when it was found that he had died thirteen years before. One Harry York was charged with stealing chickens and was defended by William Huger. The grand jury voted to acquit this defendant because of the good looks of his lawyer.

The Association voted to continue the monthly luncheons for the coming year. Visiting Alumni are invited to attend these luncheons which are held on the first Tuesday of every month at 12:30 at the Grill Room of the Atlanta Athletic Club. — RICHARD W. SMITH '21, *Secretary*, State Geological Survey, Atlanta, Ga.

Washington Society of the M. I. T.

The Society held its Annual Banquet at the Wardman Park Hotel, Washington, D. C., on Tuesday, February 18, at 7:30 P.M. Commander Glenn R. Burrell spoke to the Society on the subject of "Airships in the Navy," illustrating his very comprehensive talk with motion pictures of the various experimental flights of the airships, *Shenandoah* and *Los Angeles*.

Proctor L. Dougherty '97 addressed the group and explained to the members plans for the Reunion this coming June. Mr. Sanford Bates, President of the Massachusetts Society, was also a guest of the Washington Society at its dinner and extended the invitation of the Massachusetts Society to join with it in its entertainment and dance in the grand ballroom of the Wardman Park Hotel. A large proportion of the members of the Society accepted this invitation and found the entertainment, which consisted of dancing, Paul Joneses, and singing and costume dancing during the intermissions, very enjoyable.

About sixty members and guests were present, including the following: Walter C. Dean '00, Joseph Y. Houghton '26, Frederic W. Southworth '00, Henry C. Morris '00, George W. Stone '89, Frederick A. Hunnewell '97, E. W. Keyser '87, Parker Dodge '07, Mrs. Parker Dodge '10, Amasa M. Holcombe '04, Charles Bittinger '01, Henry M. Loomis '97, Frederick W. Swanton '90, Henry N. Phillips '92, Proctor L. Dougherty '97, Alfred E. Hanson '14, Joseph W. Clary '96, Stanley C. Sears '01, William J. Rooney '15, Edwin Hahn '09, Marion I. Walters '23, Charles H. Stratton '00, Kenneth P. Armstrong '10, Louis A. Simon '91, Bennett H. Levenson '22, Charles H. Godbold '98, Francis G. Wells '22, William B. Moore '28, Aksel M. Pederson '12, and Miss Katherine Buckingham '27.

The March meeting was held on Friday, March 21, at the University Club. The speakers of the occasion were Henry L. J. Warren '75, Class Secretary-Treasurer and Historian, and Frederick H. Newell '85. Mr. Warren called the attention of the members to the recent changes in personnel of the Institute executive staff, including the elevation of Dr. Stratton to the Board of the Corporation and the election of a new President.

Mr. Newell then entertained the members with a very graphic description of the economic and political situation in Porto Rico and explained the difficulties to be met with there caused by the high price of food, the practical elimination of island food, the low wage scale, the already crowded and ever more crowded condition of the population.

The members of the Society were very glad to entertain as their guest, Arthur L. Conn of Central High School, a candidate for a scholarship to Technology. Those present were: Joseph Y. Houghton '26, Amasa M. Holcombe '04, Henry L. J. Warren '75, Marion I. Walters '23, Frederick H. Newell '85, Alfred E. Hanson '14, Stephen F. Gardner '00, Richard Waterman '92, Walter I. Swanton '93, David A. Lundquist '19, and Kenneth P. Armstrong '10. — JOSEPH Y. HOUGHTON '26, *Secretary*, 402 Shepherd Street, Chevy Chase, Md.

The M. I. T. Club of Western Pennsylvania

Artificial larynxes, synthetic lungs, electrical brains, and scrambled speech were some of the features of the very unusual entertainment given to the Technology men who attended the last monthly meeting in Pittsburgh. The entertainment was furnished by the Bell Telephone Company of Western Pennsylvania through the courtesy of Frank J. Chesterman '05, Vice-President of that organization. Dr. Sergius P. Grace, Vice-President of the Bell Telephone Laboratories of New York, gave a spectacular and, at the same time, amusing demonstration of some of the most recent devices and processes which have been produced by the research laboratories. The demonstration was held at the Syria Mosque, Technology men and their friends being invited.

Prior to the demonstration, the regular Technology dinner meeting was held at the University Club, a large attendance marking the occasion. We are accustomed to having our members come from a distance for these dinners, not only because of the culinary and gastronomic excellence of the dinners, but also because of the tri-state character of our membership. However, we consider it a particularly surpassing achievement to have had William O. Dunbar '79 come all the way from Altoona, a distance of over one hundred miles, just to attend this meeting. With this sort of spirit in the organization, there is little wonder that our active organization now numbers 135.

The major place in the transactions of the meeting was given to the announcements of Dr. Compton's acceptance of the presidency of the Institute. The Club sent Dr. Compton its congratulations and an enthusiastic invitation to visit Pittsburgh and to attend a dinner meeting in his honor. At the conclusion of the meeting, the members adjourned to the Syria Mosque for the Bell demonstration. — SAMUEL J. HELFMAN '24, *Acting Secretary*, 435 Sixth Avenue, Pittsburgh, Penna.

M. I. T. Association of Buffalo

On February 26 the Buffalo Club, fifty strong, had a dinner meeting at the University Club. The cocktails were not shrimp. In fact, the gathering had an atmosphere harmonizing with Technology's oldest and grandest traditions. Nine stalwarts of the Niagara Falls Club assisted.

Sol Stone '01, Nat Patch '01, and Loring Danforth '01 of the scholarship committee reported that a scholarship from the Buffalo Club is a perfectly feasible undertaking. They have surveyed the field, a dam (a new committee) is being constructed, the impounded waters are rising, and will shortly have volume sufficient to sweep a man into Technology and keep him there.

After the banqueteering, the works hied to the card tables, while the lowly Jimmie Smiths went to the alleys. Frank Archer managed this basement tourney, while the more *élite* and genteel members answered the call of Ros Pfohl '17.

The Club is ready to inform the Chamber of Commerce that Buffalo has an asset they have heretofore failed to advertise — Buffalo is a great town for technicians. — DANIEL P. MOYNIHAN '22, *Secretary*, 311 Jackson Building, Buffalo, N. Y.

Detroit Technology Association

The March meeting was held on March 6 at the University Club as a joint affair with the Naval Academy Club of Detroit. The entire meeting was given over to hearing Count Alfred Niezychowski, sometime officer of the famous German sea raider *Kronprinz Wilhelm* tell of their cruise of 251 days without touching port during the latter part of 1914 and the early part of 1915. This vessel left port at New York in August, 1914, and proceeded to the south Atlantic where the crew proceeded to raid the allied merchant marine. They captured fifteen vessels, sinking fourteen of this number before they were forced to seek port at Newport News in April, 1914, because of lack of fuel, necessity for repairs, and disease among the men. This meeting was by far the best attended and the most interesting of our year. — JOHN H. LITTLE '23, *Secretary*, 28 West Dakota Avenue, Detroit, Mich.

Technology Club of Albany

The annual meeting was held at the University Club on March 28. After the usual dinner the meeting was called to order by President Burt R. Rickards '99. The members present were deeply grieved to hear that Ralph D. Bates '14 had recently lost both a brother and a sister in an automobile accident, and the Secretary was instructed to write Bates a letter of condolence. President Rickards reported progress to date of the plans for the All-Technology Reunion in June, and about half a dozen men signified their intention of attending.

In the absence of the chairman of the nominating committee, Russell Suter '00, the Secretary read the report of the committee, which was unanimously adopted with the following result: President, Harlen M. Chapman '02; Vice-President, Joseph F. Harrington '11; Secretary-Treasurer, Harold F. Hedberg '20; Executive Committee, Charles A. Holmquist '06.

At the conclusion of the business meeting the members were addressed by Mr. George W. Wriston, Wesleyan '08, manager of the bond department of the Albany office of Spencer, Trask and Company. His subject was "The Operation of the New York Stock Exchange." It was one of the most enthusiastically received talks in the history of the Club, and the speaker was required to answer questions for more than an hour after the conclusion of his address.

The following members were present: James E. Buckley '24, William A. Canaday '12, G. P. Dunn, Harold W. Fitch '18, John E. Handy '25, Theodore Horton '94, Paul M. Hillard '22, Kurt E. Lindquist '25, Burt R. Rickards '99, Alexander J. Rokicki '25, William D. Scofield '23, Irwin J. Smith, Jr. '22, Elwyn E. Snyder, Jr. '14, Redmond E. Walsh '28, and G. S. Beckwith, Lowell '21. — HAROLD F. HEDBERG, *Secretary*, 13 Fleetwood Avenue, Albany, N. Y.

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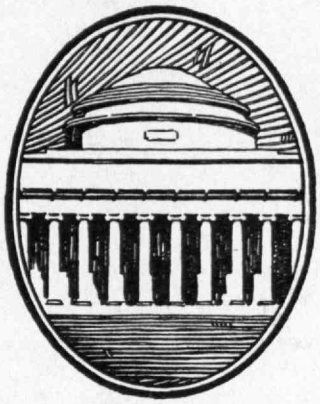

INFORMATION

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The Institute publishes a variety of bulletins, fully descriptive of individual courses, as well as a catalogue of general information essential to the entering student. The Technology Review Bureau will be glad to send, gratis and post free upon request, one or more copies of any publication listed below, or to forward any special inquiry to the proper authority.

Ask for the following circulars by their descriptive letters:

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All inquiries sent to the address below will receive prompt attention

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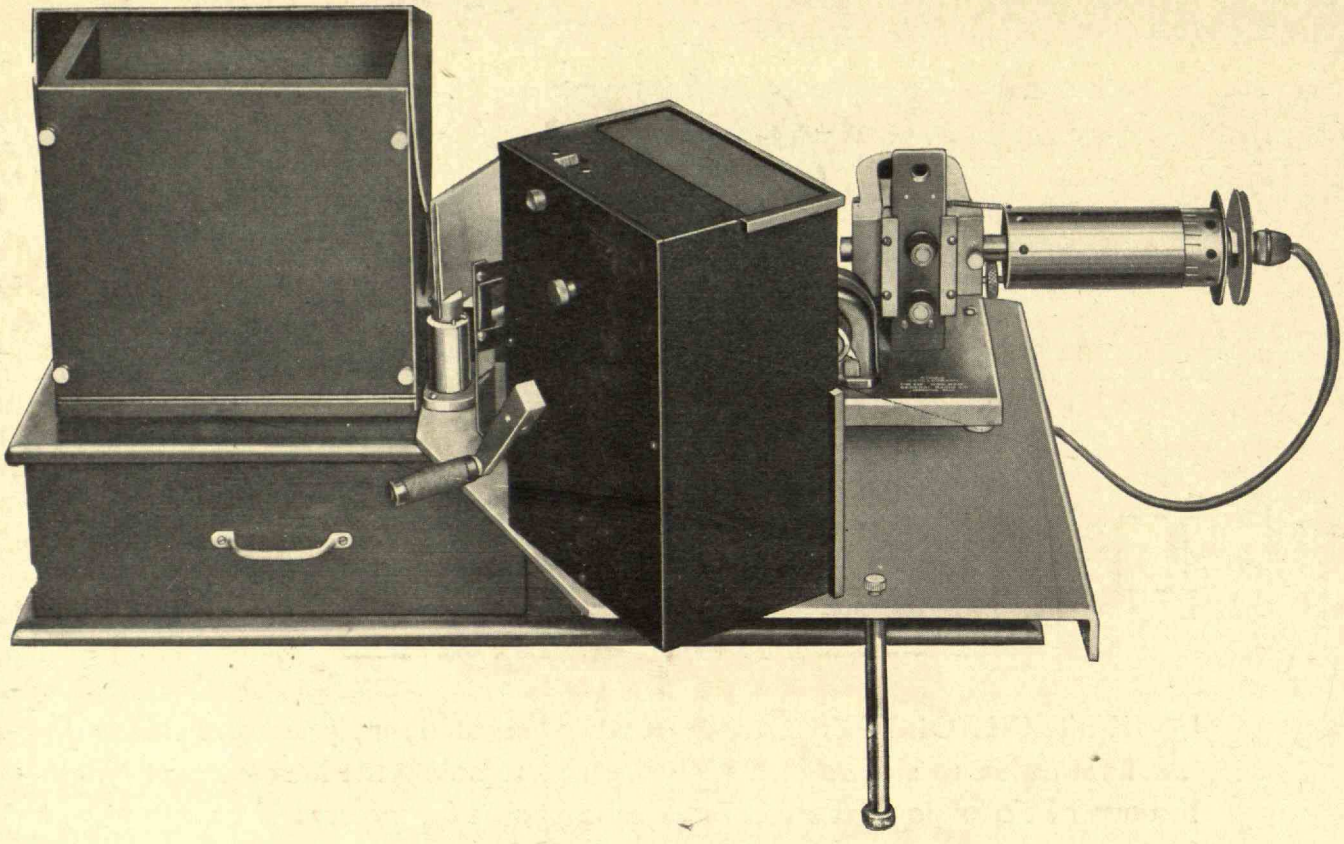

THE OSCILLOGRAPH AND RECORDING CAMERA

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